

Authentic



SCIENCE FICTION MONTHLY 1/6

No 43

This month's
FEATURED NOVEL

**TOMORROW IS
ANOTHER DAY**
by K. HOUSTON
BRUNNER

MAN'S LAST OUTPOST, ...
TRITON MOON OF NEPTUNE

Short stories by: **WILLIAM F. TEMPLE
RAYER & JAMES**

**JONATHAN BURKE
RICHARD WILSON**

VOLUME I No. 43
ONE SHILLING and SIXPENCE

Authentic

SCIENCE FICTION MONTHLY

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H. J. CAMPBELL

Writes...

It has been a very pleasant thing to see how many of you are delighted with the extra non-fiction this magazine now carries. By far the majority of you have asked for even more—and the minority merely did not state an opinion, contenting themselves with declaring that the increased non-fiction is a “very welcome addition.”

So, because this magazine is run along the lines demanded by its readers, you will soon be having an even larger proportion of scientific fact articles and features than I am putting in now. Already I am lining up some of the best-known scientists as future contributors of fascinating, interesting and instructive articles. I think I can promise you just the kind of thing you are wanting—factual science, accurate and authentic.

And this leads me to the matter of competitions. These have always been popular with readers, though sometimes causing headaches in the editorial office. The amateur

short story competition, for example, was highly praised, but I'm afraid it showed that very few would-be writers have the stuff in them to turn out material of the right quality. One of the main reasons why I discontinued the competition was that it became very difficult to include each month a story of sufficient standard.

Now, you can try your luck with articles. The writing of non-fiction is considered to be considerably simpler than the creation of a fiction piece. Aspiring authors among you can now put this to the test by writing scientific articles for this magazine. They should be either one thousand or two thousand words in length, and must be of very wide interest. No textbook rehashes, please. A year's free subscription will be awarded the author of each article published. Make sure that you mark your manuscripts “Competition.”

Remember, too, that I'm always very pleased to receive suggestions for article topics.

If there's a subject on which you'd like the views of the experts, just let me know.

Of course, since we have already increased our pages to the economic limit, this extra non-fiction means that there will be less fiction. But even that has its compensations, for I shall be able to be far more selective in my acceptance of stories, with consequent rise in quality. All in all, I am confident that you will be highly pleased with the change.

Convention time is nearly upon us again, and here in Britain plans are well under way for the first real provincial Science Fiction Convention—the Super Mancon, which will be held over Whit-sun weekend (June 5-6) at the Grosvenor Hotel, Manchester. If you haven't already got in touch with the organisers, send 2s. 6d. Registration and Membership Fee to the Honorary Treasurer, Super Mancon Committee, Balmoral Hotel, 33 Princes Square, London, W.2. Overseas readers who wish to support the convention and receive bulletins and programme can do so by sending 50 c. to Dale R. Smith, 3001 Kyle Avenue, Minneapolis 22, Minn., U.S.A.

This is the first time that a large-scale science fiction convention has been held outside London. Having served on the

London convention committee, I know just how much work and worry goes into these things, and I wish the Manchester people the very highest success in their endeavours. I for one will be there, and I hope to meet many readers at the same time. Make a note of the date and look out for me.

Hearty congratulations to SPACE DIVERSIONS and SPACE TIMES, provincial fanzines, for their record, bumper issues recently! Read about them on page 151. May all other fanzines follow their example!

There is little space left in which to dwell on the contents of this issue. But I'm sure they can speak quite well for themselves. The long story by young author John Brunner shows us that he has a high potential within him. Burke and Temple are well known to you. So is F. G. Rayer, who gives us this story in company with new author E. R. James. Richard Wilson is a brand new author of science fiction; I'm sure you'll like him. Tell me, will you?

You will be interested to know, I am sure, that Charles Eric Maine has adapted his *Highway 1* (Authentic No. 39) for radio. It will be broadcast shortly, and is being considered for filming. Congratulations to Charles—and ourselves!

H.J.C.





TOMORROW is another day

by

K. HOUSTON BRUNNER

Maybe mankind's future lies not in physical
prowess but deep within our minds

"DREAMS, EH?" said the psychiatrist genially. "What sort of dreams?"

He was of medium height; dark, with receding hair, and excessively white, long hands which he flexed and clasped incessantly. His skin had a curious waxen quality, like a mask, but there was nothing mask-like in his quick and ever-ready professional smile. August Michel regarded him with distaste.

"Nightmares," he said flatly. "Nightmares that make it so terrible to go to sleep that I don't—three nights out of four. That can't go on."

"Obviously," agreed the psychiatrist, allowing a hint of worried sympathy to creep into his voice. Michel could imagine the neatly ordered precision behind the waxen brow—"Take one part worry and three of sympathy. Mix well. Add to voice."

"Can you describe them?"

"They start, so far as I can tell, the moment I doze off—as soon, in fact, as my will relaxes," said August

Michel. "It's as if I were doing something normal and ordinary, in the everyday course of events. They are much more perfect and circumstantial than any other dreams I ever had.

"But as time goes on, things begin to happen. One of them is that my surroundings alter. Quite subtly, you understand—as if they were sculptured in wax and were melting into obscene shapes as soon as they are out of my range of vision, and didn't quite change back fast enough to avoid my noticing it."

He shut his eyes, shuddering as he recalled the vivid details that crowded his dreams.

"Then someone is there. It may be any of the quite ordinary people I pass, or talk to, or work with. People don't alter, you see, even if they happen to *the* person. That isn't clear, I know, but it's the best I can do. I know when he's there, but I don't know who he is—he may even be a woman sometimes. It's as if I feel his presence

growing stronger; and when I notice it consciously, he's been there some time without my realising it. And he is evil beyond description. It's like—like a bad smell that has the power to act on the bare brain."

He opened his eyes and looked directly at the psychiatrist. "Then just as the sense of wrongness reaches a climax, he drops all pretence. Everything changes from the false to reveal the evil reality behind it." He was sweating visibly now, and there was a tremor in his voice which he fought hard to conceal. "And finally the person himself comes out from behind whoever it is and—looks at me. And he—I can't describe——"

"Like this?" said the psychiatrist ruthlessly, and peeled the mask from his face. Behind it he was thin and hungry, with great cold eyes and teeth that laughed soundlessly and forever in a lipless mouth.

August Michel screamed.

He screamed silently in the

empty caverns of his skull for what seemed like an æon, till his mind fought its way up from sleep to regain conscious control of his vocal cords. The noise woke him instantly, and stopped as if cut off.

Dawn showed dimly outside his window. Sweating, he got off the bed and gathered up the bedclothes which his convulsions had tossed on the floor. He piled them in the middle of the mattress and went over to the wash basin in the corner. There was no point in re-making the bed and trying to get any more sleep. He'd had nearly three hours already tonight, which was more than the image of horror trapped in his subconscious usually granted him.

He gulped a long draught of water and splashed face and hands with the cold liquid. His mind cleared a little. A psychiatrist, eh? This was the first time one of the dreams had resulted in a constructive suggestion. A psychiatrist. And to hell with the expense. What was the

good of money in the bank if you didn't enjoy it?

And with these dreams he wasn't enjoying anything at all.

He pulled on a dressing gown and went to the jacket hung beside the wall mirror for a cigarette.

When he'd lit the cigarette, he looked at himself by the little yellow flame in the mirror. And saw a face that didn't please him much. The eyes were puffy, the mouth sullen and discontented, the black hair standing up in untidy spikes.

He snapped off the lighter and strode across to the radio-phono combination against the opposite wall, turned it on and checked his watch. It was a quarter to six, and there was dead air all over Europe, except for an occasional message on short wave. He switched the wave-band selector to "Gramophone" and dropped the needle on a long-playing jazz disc. He needed something brash and vital and earthy

to counteract the subtle horror of the dream.

Then he wrapped himself in a blanket and sat in his arm-chair, smoking moodily and staring into the darkness. He was shaken, and had to admit it. He needed sleep. He couldn't separate sleep and the nightmares since they started three months ago. And the one time he had tried sleeping pills they hadn't worked. It was impossible to escape the dreams, which ran around his skull like mice with steel-shod feet.

Morosely he analysed the effects the dreams were having on him. They had already sandpapered his nerves till he was irritable and impossible to live with. His work was suffering, and a week ago there had been a standup row with his employers, that had only failed to end in his being fired because of his previous record.

Objectively, he considered what could be at the root of it. Guesswork this, for obviously it must be something his

conscious mind was incapable of accepting. But there were possibilities.

War hangover?

Unlikely. He'd seen some savage things in war, especially when he went into Germany with the liberating armies; but mere physical suffering was as different from this as the rack from the water torture. One you could fight—but this subtle, soul-eating poison—how could you fight *this*? Besides, that had been years ago. Why should it wait till now to spring up for the first time, dimmed by the passage of the years?

Maybe analysis would clear it up.

The record ran off into the playout groove. He turned it over and set the pickup on the other side. For the next ten minutes he just sat there, clinging to the music like a helpless man, on a raft, concentrating on all its evocations of cheerful ordinary things and people.

He felt very near the limits

of sanity in the late hours of the night. They say it is then that the currents of life run lowest: heart, brain, muscles, all are relaxed and slack; and it is then, too, that the will to live, the *libido*, is at its weakest, and the *mortido* threatens to overwhelm you. If Michel's personality hadn't been unusually rigid he might have given way to despair; but since his parents died when he was six years old, he had grown a tough protective armour against the undermining of hope.

He changed the record for one of ragtime piano, and lit another cigarette from the stub of his last one.

He came to a decision. He would visit a psychiatrist now—today. A good one.

The resolution calmed him a little. Outside, the dawn had come up red and turned to gold. He got up and looked at it, the record tinkling softly in the background. When the sun was well up, he returned to the chair and sat, without moving, in an

effort to ease some of the tiredness from his muscles.

At a quarter past seven there was a knock at the door. He roused himself, said: "Come in, Irene."

She was pretty and blonde, and since she first came to act as maid a few months back, she had liked Michel. She came around the end of the bed and set the tray with his tea on it within his reach.

"Nightmares again, Mr. Michel?" she said, sympathetically.

He managed a wan smile. Everyone in the boarding house knew about his nightmares by now.

"Worse than usual," he admitted. "It's getting me down, Irene."

She looked at him out of wide, blue eyes that seemed too big for her pretty face, and said: "You ought to see a doctor, Mr. Michel."

He said, without looking at her: "I'm going to. A psychiatrist, that is. Today."

"That's a good idea, Mr. Michel," said Irene, approv-

ingly, filling his cup. She sugared it and handed it to him. "You should have done it before, like I said."

He took the tea with a word of thanks, repeated: "Well, I'm doing it now."

She paused on the way out, asked: "Would you like breakfast up here, sir?"

He thought for a brief agonising instant of the empty chatter of a boarding house breakfast and concluded that his temporary mastery of his ragged nerves would never stand it. He nodded acceptance, and she went out.

He drank his tea in long gulps and went to shave. His hand was unsteady, and he cut himself twice, and noticed that daylight revealed the pouches under his eyes better than the flame of his lighter.

He staunched the cuts and regarded himself thoughtfully as he dressed. Good-looking he had never claimed to be, but it was essential to his job that he make the best of what he had. *This had to stop.*

He didn't like to think what

might happen if the psychiatrist couldn't cure him.

He was knotting a tie when Irene knocked again and brought in his breakfast, together with a couple of letters. He took them from the tray and slit them open.

The first was from a firm of advertising agents in Manchester, who had apparently heard of his recent quarrel with his present employers, and offered him a job "if he ever felt in need of a new post." A tongue-in-cheek letter. They were well-known for their sharp practice, and evidently thought that he, discredited, would be available at bargain price. He threw the letter away.

The other one was from a solicitor in Lincoln's Inn Fields, and informed him that he had inherited a hundred and seventy thousand pounds.

He stared at it blankly.

Dear Mr. Michel,

We have ascertained beyond doubt that you are the closest surviving relative of

Pierre Michel de Tours, who died in 1672. In accordance with the terms of his somewhat unusual will, as ratified, secured and endorsed by his descendants, you receive one per cent. of the estate he left at his death. This, owing to the prudence of one of your ancestors, in depositing it at compound interest approximately a hundred years ago, amounts to the considerable sum of one hundred and seventy thousand pounds (£170,000) in round figures.

I should be glad to see you at any time which suits you, to complete the formalities of transference.

Yours faithfully,

*pp. Harrop Sons and
Longman,*

Walter A. Harrop.

One half of his mind struggled to reject the reality of the letter, on the basis that "Nothing like this ever happens to me." At the same time, he suddenly felt a contentment and a relaxation

that he had not felt since the nightmares began three months before. Something inside him seemed to say: "This is as it should be. This is right. This is according to plan."

It didn't occur to him to wonder: *whose* plan?

He recognised the voice at the other end of the line.

"Advance Advertising Limited," the girl said.

"This is August, Sandra."

"August! Where on earth are you? The boss is hopping mad!"

"Let him hop," said Michel with equanimity. "I won't be in today—I'm going to see a psychiatrist about my nightmares."

"That isn't going to please the Barker," hinted the girl, darkly. "Are you sure about that trip to the psychiatrist? You sound happier and healthier than you have for weeks."

"Last night was so bad I'm just happy to be awake again," he said. "This is genuine, Sandra."

"All right," sighed the girl. "I'll buy it. But I warned you he's not going to like it."

To hell with Barker, reflected Michel. But the girl had been right. He did sound better suddenly, and he knew somehow that it was due, not so much to the immediate prospect of more wealth than he had ever dreamed of possessing, as to it having, somehow, counteracted the sense of wrongness which had become a permanent hangover from the nightmares.

Even as he looked at the letter now, in the cramped telephone cabinet, with the list on the wall, pencil dangling on a string beside it for the lodgers to note the cost of their calls, it brought a warm satisfaction.

Now—the psychiatrist. There was a name in his mind, and he pulled out the directory and found the number opposite it. *Quonsett, Dr. Vernon, consulting psychiatrist, Harley Street.*

He had dialed, and was listening to the ring at the

other end, before he wondered where he had heard the name.

"Dr. Quonsett's secretary speaking," said a crisp, efficient voice, which made him think of starched cuffs and the smell of disinfectant.

"I'd like to make an appointment with Dr. Quonsett—today if possible. My name is Michel."

"Excuse me a moment. I'll see if the doctor is free at all." The sound of a book being opened and pages rustled. Then the voice again. "There's a chance that the doctor will be free about five o'clock this evening. If it would suit you to call then and discuss your case with him——?"

She left the end of the sentence floating. Aposiopesis, remembered Michel wryly.

"Yes, that would suit me well enough," he said. "Thank you."

"Thank you," insisted the doctor's secretary, and put down the receiver with a determined click.

Michel dropped his own receiver into the cradle for a

moment, and then dialed Harrop Sons and Longman. A man answered this call—presumably one of the clerks.

He said: "My name is Michel. I received an extraordinary letter from Mr. Walter Harrop this morning, saying I'd come into a fortune. I don't understand it at all, but I'd like to call and see him about it some time."

"You're Mr. August Michel?" the clerk asked.

"That's right."

"Yes, Mr. Harrop was expecting to hear from you. He isn't in yet, of course, but if you can call today at about twelve o'clock, he would be very glad to see you."

"Yes, I can manage that. Thank you."

"Thank you, sir."

"Oh, by the way——"

"Yes, sir?"

"Is it really true?"

"Yes, sir," said the clerk, unemotionally. "I handled the papers myself. The sum involved is about a hundred and seventy thousand pounds——"

"Thank you," said Michel.
 "Thank you very much."

When he put down the receiver again he was surprised to find that his hand was shaking and his heart racing far above its normal rate.

Five minutes before noon he was walking down Lincoln's Inn Fields, the park on his right, looking for the brass plate of Harrop Sons and Longman. There was a tight sensation in his chest—a feeling he hadn't known since the war. He'd always had it before going into battle. He'd had it at school, too, before exams. And it awoke unpleasant memories.

But it was having a hard time trying to break through the layer of warm confidence that had sprung from nowhere that morning.

He was met by a thin man with glasses and a grizzled head, who said at once: "You must be Mr. Michel, sir."

Michel nodded. "That's right."

"Mr. Harrop's waiting for

you, sir. Will you come this way?"

He pushed open a door at the end of a short passage and announced him.

Michel went in.

The man who put down a file of papers and offered his hand, smiling, looked more like a soldier than a lawyer. He was tall and going bald, with a thick brown moustache beginning to grey in places. Michel shook the hand he put out and found it very strong.

He took the chair Harrop indicated and pulled the letter from his pocket. Harrop noted the gesture and laughed.

"You find it hard to believe, I understand."

"Not only that," admitted Michel. "I don't even begin to see how it's possible."

"Well, that's difficult, even for me, and I've been busy on the matter for well over a year. Cigarette?"

"Thank you."

"You had a very remarkable set of ancestors, Mr. Michel. Do you know anything about them?"

"Hardly anything. My parents were killed in a flying accident when I was about six, and I was brought up by a cousin of my mother, who disapproved of her marriage to my father and made my life quite insufferable, with her incessant references to how much I owed her. I know almost nothing of my father's family."

"I expected as much," nodded Harrop. "I'd better go into detail and give you the full story." He settled back in his chair and opened the file he had been reading when Michel came in.

"As far as we've been able to trace, the family first left a mark on history at the beginning of the seventeenth century, with the advent of Pierre Michel. He was in some ways more remarkable than any of his descendants, in that he lived to be ninety-eight and was reputed to look half his age when he died, and being a very clever financier, left a fortune which would come to

about five million pounds at today's values.

"Well, his grandson, Auguste-Luc Michel, took over, and in accordance with Pierre's will, used all but one per cent. of that inheritance to found a banking and trading business which he moved to Paris, and eventually ran up to international fame."

"Why 'all but one per cent'?" demanded Michel.

"That," said Harrop, deliberately, "is the really strange thing. Pierre Michel left specific instructions that it was not to be touched by anyone except the nearest descendant of his to be alive in the year 1954."

Michel raised astonished eyebrows. "He was looking pretty far ahead, wasn't he?"

Harrop shrugged. "None-theless, here it is." He passed two sheets of typed paper across the desk. "The first of these is a copy of the actual will—I have the original in a safe deposit, because it's in rather bad condition—and the other is a translation."

Michel read through them with growing amazement. When he finished, he looked up and said: "Why did he state that I would be greatly in need of money?"

Harrop shrugged again. "I wasn't in your ancestor's confidence, Mr. Michel. However; another extraordinary thing about your family is that they maintained the trust, always retaining a sum equal to that which had been earmarked by Pierre the first. The nearest it ever came to being lost was in 1843, when the current head of the family, Victor-Marie, bankrupted himself at the gaming tables and attempted to appropriate the legacy to his own uses. However, someone—it is not quite clear who, a distant cousin, maybe—saw to it that this did not happen, and as a further precaution banked the lot, at compound interest, with his own bank. When the firm, which had in the meantime shifted its headquarters from Paris to London, was amalgamated with a British

bank some ten years later, the legacy went too, and because of specific instructions from the family, who apparently believed quite implicitly in Pierre's foresight, survived as an independent account right up to today, when it amounts to the not inconsiderable sum you inherit.

"Anyway, at the same time, the original will which had been certified, generation after generation, was left in charge of a law firm here, with instructions from the current head of the Michel family in a sealed envelope, to be opened on December 31st, 1953. It survived two bankruptcies and the blitz, and in 1953, my firm, which had inherited the job along with other encumbrances from a firm called Cliveden Boschenheim and Richards, opened it and set about tracing the legatee.

"Well, it took us three months, because your father died so long ago, but we managed it eventually. And you inherit."

"How soon," demanded Michel, "do I get it?"

Harrop laughed booming. He said: "Well, there's no legal doubt at all that you're the nearest surviving relative of Pierre Michel the first—by about four 'removed's. And the will is very specific. You inherit as soon as you sign a receipt proving that we have discharged our duty. I have a cheque for the money here."

Michel jerked upright. He said incredulously: "As simple as that? Doesn't it have to go through probate or something?"

Harrop passed the receipt and the cheque across the desk. He said: "That will's been probated over a dozen times in the course of the years, since, of course, the money had to be handed down generation by generation. Each in turn left it to you. It's yours, and no legal disputation of your claim can be made. But there are still one or two unusual things about your family which might interest you."

Michel settled back in his chair. "I'm listening," he acknowledged.

"The line isn't pure, in spite of its never having lost the name of Michel. How this happened I don't quite understand. On several occasions, apparently, the head of the family has died without male issue. Through this, the four or five collateral branches have either vanished completely, or lost the name and become so diluted as to render them ineligible for the inheritance. The main line, however, has survived, name and all, owing to four of the daughters in no less than four different periods marrying men also named Michel, who were in no way related to the family, and could prove it, too, because at least twice scandalous imputations had to be refuted."

"That's very curious," said Michel, stubbing out his cigarette.

"Not least curious is the statement, made regularly by those who saw these people,

that each of them had a remarkable family resemblance.

"Your father was one of them."

Michel's face went slowly white. He stared at Harrop for any sign of suspicion. Eventually he said: "You're—certain?"

"Oh yes. Quite certain," Harrop assured him, extinguishing his cigarette. "We had to search your family records very thoroughly. We thought we'd come to a dead end at first, because no one had kept track of your family at all during the bankruptcies and winding up of the firms which successively handled the business. In particular, in 1901 a Mrs. Clarissa Michel died in childbirth, and her husband, who was very much in love with her, threw himself off Hammersmith Bridge six weeks later. He was Arthur Michel, senior surviving member of the family. Well, that, we thought, must be that. Until someone was alert enough to enquire—what became of the child?

"We traced her as far as the people who adopted her—the family of a business associate of her father's. In 1922 she was living by herself, quite ignorant of her origin, not knowing herself to be a Michel. Then she met your father—Alexander Michel—and fell head over heels in love with him. Is anything wrong?"

Dryly, Michel said: "If I'd known that, I would have hated the cousin who brought me up even more than I did. I've just awoken to the meaning of certain veiled remarks she made to me when she was feeling more than usually poisonous. Let it pass."

Harrop regarded him seriously. "How about lunching with me at a good restaurant—to celebrate your luck?" he suggested. Michel smiled a little weakly.

"I'd like to very much," he said, gratefully. "In the ordinary way I'd not take what you told me hard at all, but I'm not in very good shape lately. I have nightmares."

He felt at once impelled to explain and desperately embarrassed at making excuses.

Harrop eyed him thoughtfully. "You need that lunch, Michel—even without the excuse of celebration."

THE CLERK at the bank where he presented the cheque was not known to him.

"Yes, Mr. Michel?"

He knows my name——? Oh, of course—it was on the cheque I just presented. He said: "A blank cheque, please."

The clerk passed him one, indicated the pens and ink on the counter. Michel thanked him, glanced at the calendar, and dated the cheque, inscribed "Cash" on the top line. Just enough for his immediate needs—he could make some ambitious plans later. A trip abroad to take advantage of what was left of the summer——

His thoughts ran blithely ahead, and he signed the cheque. Then he presented it to the clerk, who said: "How

would you like it, Mr. Michel? In fives?"

"Oh, in ones will be all right," said Michel.

The clerk looked at him half humorously. "Two hundred one-pound notes are rather bulky, don't you think? Are you sure?"

Michel looked at him blankly. Two hundred——? But that was much more than his immediate requirements. Abruptly he said: "Let me see that cheque again."

The clerk handed it back. Sure enough, it was made out for two hundred pounds, in his own writing. He had meant to write twenty, not two hundred. He started to speak, stopped before he had got a word out, wondering. The clerk still looked at him with an expression half quiz-zical, half amused.

He did remember making it out for two hundred after all. The reason was unclear; but the memory was there, in a curiously unreal setting, as if an impulse from the depths of his mind had guided his hand.

He said, finally, inanely: "In fivers, please."

The clerk, nodding, still with that curious half-smile on his lips, turned away and began to count them out. Meanwhile Michel, feeling absently for his notecase, wondered furiously what was happening to him. Eventually, puzzled, he accepted the two hundred pounds, filled his notecase and one of the bank's envelopes, and put them carefully away.

He thanked the clerk mechanically, looking at his saturnine face and very white hands—like a musician's—and went out.

Maybe Dr. Quonsett would account for what had happened.

At about twenty minutes past three, a man named Guiscard, in a back room of a stockbroker's office in the City, reached for a button on his desk. His secretary answered from the room next door.

"I'm not to be disturbed

till I give permission," he ordered, curtly. "On no account!"

"But Mr. Guiscard!" wailed the girl. "What about that deal in copper Mr. Williams is negotiating?"

"Freeze it. I have more urgent business to attend to." He shut off the 'phone and sat back in his chair.

He said: "You're new to me."

"Not unnaturally. I'm a great deal younger than you, Mr. Guiscard."

Guiscard chuckled. "That's true enough. Well, what can I do for you?"

"I don't know if you can do anything. But I sincerely hope so. You answered the appeal I made, and from my inquiries I believe I've selected the right party. Contact with the wrong party could be disastrous."

"Humph." Guiscard considered the other seriously. "In what way?" He reached for a cigarette and lit it with exaggerated care.

The other began to explain.

Guiscard said finally: "I must congratulate you on a tremendous piece of fact assembly. Your perception is almost fantastic. I forecast a great future for you."

"If there is any future for us at all," said the other dryly.

"True enough. But to deduce not only the existence of myself and my associates, but also of the scheme at present weaving from a chance contact with a man who is completely unaware of his function as a focus of the scheme smacks of the impossible. I'm sorry that you've been disturbed from your plans—I must say they were considerably better laid out, not to say mature, than mine were in comparable circumstances—but you must realise the danger of the situation."

"Of course. I realise it fully."

"What prophylactic action have you taken to date?"

The other listed his provisional measures, and Guiscard signified approval. "We'll have to resort to much more

drastic steps soon, of course. There's a major crisis due shortly. What do you think, Clairmont?"

Clairmont's affirmative came emphatically. "Not only a major crisis. Potentially the biggest crisis in history. The one of 1636 was like a firecracker compared to this one when it comes."

"You think so?" Guiscard's anxiety was plain in the question.

"I know so! I've made a preliminary analysis of the information just brought to us——"

"Excellent," interjected Guiscard, but Clairmont brushed him aside.

"Every single pointer indicates crisis—calamity—catastrophe," he announced.

"I can confirm that," said the fourth speaker—a woman. "I'm sorry, Guiscard, it's unmistakable. You said you were certain this crisis was at an end now, but we appear to have been outguessed and outwitted at every turn until now. You saved us from a

very nasty upset, young man."

"All right," said Guiscard. "Probabilities avoided can be discounted. Now what do we intend to do? The opposition has had a long time to plan. They nearly delayed this discovery till it was too late."

"I have a proposal," said the newcomer. They discussed it at length. Twenty minutes later Guiscard thumbed open his desk 'phone again.

"Thank heaven you're ready, Mr. Guiscard," said his secretary, prayerfully. "Mr. Williams has been here for ten minutes driving me frantic——"

When Williams pushed open the only door to the fourth floor office he found Guiscard sitting alone at his desk.

That curious impulse irked Michel all afternoon. What was happening? Had the wrongness of his dreams begun to extend into his waking life? The thought appalled him, especially when he realised that with the excessive

circumstantiality of his dreams he might as well be awake as sleeping, and since he could only kick his heels until the doctor was available at five o'clock, he fell to brooding.

Gradually it began working over the worn fibres of his nerves, subtly re-awakening the accustomed irritabilities and worries over which the unexpected, but seemingly anticipated windfall of the legacy had spread a temporary balm. By the time he was due at the psychiatrist's he was again feeling short-tempered and overtired, and the tight nervousness in his chest was an exaggerated ache.

He rang the bell. The grey-haired woman in starched cap and cuffs, whose voice he had heard over the 'phone, came to answer it, and showed him into a waiting room. He sat alone, nervously turning over the pages of an ancient magazine, until she returned to say: "Dr. Quonsett will see you now, Mr. Michel."

He followed her down a dim, cool corridor, lined with

old prints and carpeted in heavy green, to a door beyond which was visible a comfortable room. It might have been a scholar's study rather than a consulting room.

Dr. Quonsett said: "Ah. Good evening, Mr. Michel," but Michel didn't hear him. He was gazing in horror and fascination. The doctor was a man of medium height; dark, with receding hair, and excessively white, long hands which he flexed and clasped incessantly. His skin had a curious waxen quality, like a mask, and his professional smile was exactly as Michel had seen it in his dream.

Almost, in that instant, he expected the desk to writhe into a coiled serpent, and the walls to ooze and drip stinking ichor; the lights to waver into greenness like the phosphorescence of putrid fish. He waited, entranced, while his mind tottered on the edge of unreality—an unreality in which he would have seen the doctor pull away his mask and show a lipless, laughing mouth

full of inhuman teeth, while the nurse fought to calm him and lead him away to a cell.

"That's what *he* wants!" said a voice inside his head, softly, insistently, urgently; and since it was not using words which exist in a vacuum but was playing on the synapses of his brain, there was no need to explain that the *he* referred to was the person that would be revealed if the psychiatrist were to take off his face.

He released pent-up breath in a loud exhalation, shut his eyes and steadied himself. Then he shook his head and took the hand Quonsett extended, forcing himself to look steadily at the face that was not—could not be—a mask.

Behind him, the nurse shut the door.

He sat down at the doctor's invitation, breathing heavily. The doctor, flexing his hands, said: "What's your trouble, Mr. Michel?"

"I—have dreams," Michel enunciated, his voice kept

level and steady by a deliberate effort.

"Dreams, eh?" said the psychiatrist genially "What sort of dreams?"

This renewed parallel almost broke Michel. He felt a sudden surge of that tremendous compulsion which sometimes accompanies the *deja vu* illusion—to break the sequence of "repeated" experiences as soon as possible. He felt impelled to explain, apologise, say, "I'm sorry, doctor, but I dreamed about you last night, and seeing you now has given me a shock. The dream was so exact——"

No. It was the same voice that had seemed to tell him to keep a grip on himself.

No! That's what he wants. He wants you to admit it openly, give him a wedge with which to split your mind. As long as you don't admit it, you're safe.

Is he the psychiatrist? Is he behind the mask?

No. The psychiatrist is genuine. He picked this man as his mask in your dream last

night simply to make you afraid when you saw him in reality. Stop worrying. I'll help you stand the strain of déjà vu.

Who are you?

Fool.

Almost, he echoed that aloud. It could be no one but his own self. Maybe it was a sudden re-emergence of that sense sometimes called the sixth, given a false verbalised expression because of the tremendous strain he had undergone these past few weeks.

He steeled himself.

"Nightmares," said Michel aloud, every nerve screaming. "Nightmares that make it so terrible to go to sleep that I don't—three nights out of four."

When it was over, the relief left him like a wet rag. He said nothing about it to Quonsett, though—only made an appointment for full-scale analysis later on. Without really being conscious of what he was doing, he stumbled out of the house in Harley

Street and hailed a passing cab.

The driver, a tall fallow man, with two days' beard, clicked down his flag and said: "Where to, chum?"

"A good bar," said Michel, weakly. "I need a drink."

He felt a little better after the alcohol, though not much. He would have sold his soul for a night of trouble-free sleep at any time in the past month, but since he knew no reliable formula for devil-raising he couldn't make the trade. He had tried drinking himself into oblivion, once; but the alcohol relaxed his will power and the things on the borderline of consciousness had slipped over to make his evening a waking nightmare. He dared not sit and drink and brood.

He roused himself and had something to eat. He swallowed the food without relish, wondering just what uncanny chain of events he had been caught up in. Not for the first time he pondered if it presaged the failure of his mind

under the strain of no sleep.

Afterwards he went in search of something to divert him from his worries. He found a revue theatre which advertised a continuous performance, and slipped into one of the vacant seats in the darkened auditorium. Some fifth-rate singer was giving a rendering of the song currently at the top of the hit parade. She finished almost a half tone sharp, which made Michel wince.

There was a conjurer next, possessed of remarkable skill in manipulation, and the audience began to take an interest. He was a thin man with fair—almost white—hair cut very short, who wore evening dress with quite incredible elegance, and had an expression of complete boredom.

Without interest he multiplied billiard balls from one to ten, tossed all ten into the air and left them there, apparently, for they certainly didn't come down again. He turned objects into other things and back,

still with an expression of abstract disinterest. He used no patter whatsoever, stood still on the stage in a brilliant white spot, with a girl in a black evening gown to hand him his apparatus.

After a truly fantastic trick, in which he casually picked up a samurai sword and then, without pausing, switching swords or using a frame or other concealment, chopped through a broomstick and the neck of his assistant, dividing the broomstick and leaving the girl unharmed. Then he discarded his equipment and sat down on a chair in the centre of the stage.

When he spoke, for the first time, to an interested audience among whom even Michel was paying attention, his voice was flat and as bored as his face. His assistant came down among the audience.

The magician said: "I shall now proceed to read your minds. If you wish me to give a demonstration of my powers, please signal to my assistant and hand her some

small object which is invisible to me. Cover it with the cloth she is holding before you hand it to her if you like. I shall tell you what it is."

He succeeded with several items—a watch, a ring, a pipe, a knife, a diary—and then offered to read written messages of not more than a dozen words. He succeeded with all of them, word for word, without more than a slight frown of concentration.

Michel felt his interest rise. He was being impressed in spite of himself. He could see how the first trick was worked—an imperceptible gesture from the girl or a key word in the acknowledgment she made to those offering things to her, but the messages were something altogether different. He stood up, waved aside the girl when she came up with pencil and paper, and spoke directly to the man on the stage.

"You claim to read minds," he said, conscious both of the eyes of the audience fixed on him and of the fact that his

voice was poorly controlled, and he was expressing himself badly. "But can you prove to us that you can tell what someone is thinking—I mean, without the intervention of your assistant——?"

For the first time a flicker of interest appeared on the face of the magician. He motioned to the girl, who came slowly back from the auditorium towards him, and said in deceptively gentle tones: "Yes, Mr. Michel."

"Guiscard! We've lost him!"

"*Lost him?* In God's name, how? No, never mind explanations. *Find him!*"

Michel started. He said, incredulously: "How do you know what my name is?"

The audience chuckled.

"I read your mind, of course. To prove that my assistant didn't take it from the lining of your hat, I will tell you some other things you already know." A slight smile was visible on his face now.

"Your full name is August Michel. This morning you inherited a hundred and seventy thousand pounds, but you are extremely miserable in spite of this, owing to a series of nightmares you've been having. This afternoon you saw a psychiatrist named Vernon Quonsett at five o'clock. And if you come round to my dressing-room after the show——" here he looked steadily at Michel, who noticed for the first time that his eyes were dark and tired—"I think I can help you a little. Now, ladies and gentlemen, that is the end of my show."

Amid applause, Michel sat down numbly. A man in front of him turned around and said: "Was that right what 'e said, chum?"

Michel nodded. "Exactly right."

"Aw, come off it, Bill," said a friend of the man who had turned around, "it was all fixed. This bloke got planted ter do that. Nightmares cock and——"

Abruptly Michel got up and pushed out. As he did so, he heard Bill's friend say, triumphantly: "There—see? Soon's I come close ter spottin' 'im, up 'e gets and aht 'e goes."

Michel made his way around to the stage door and explained the situation. The doorkeeper shrugged, and consented to show him along to the conjurer's dressing room. He knocked.

"Come in," said the weary voice he had heard from the stage. He turned the handle and went in.

The magician was sitting in a tilted-back chair, with his legs outstretched, smoking a cigarette in quick nervous puffs. At close quarters Michel saw that his face was fine-drawn and his hands lined with blue veins. His skin was like transparent parchment.

"Sit down," he invited, without moving, except to indicate a chair. The almost unnatural stillness he maintained, apart from the hand that held his cigarette, his

mouth and his quick, dark eyes, heightened the impression of porcelain fragility that had come to Michel even across the glaring footlights.

He shut the door and took the seat.

"I told you I could help you with your nightmares," the conjurer began. "Maybe I can. Please don't hope for too much."

"I won't," said Michel, dryly. "As a matter of fact, you didn't have to make that promise to lure me around backstage. I would have come anyhow, to ask you how you actually came to know so much about me."

The magician lit another cigarette from the stub of the previous one and offered the packet to Michel. He said, breathing grey-white smoke: "I got it from your mind, as I claimed. I have a power, a quality, call it what you like, which enables me to catch the superficial thoughts of other people. It's a tremendous strain, you understand—but your mind

was in such a state of agitation that it was easy enough in your case. I find that tiredness or nervousness is a great help in the accuracy of my readings."

"What's your name?" demanded Michel, suddenly.

"Richard Montague. Not that it matters." He dragged on his cigarette, and Michel saw suddenly that his hands were shaking with fatigue.

Half in alarm, he said: "Do you feel all right?"

Montague smiled faintly. "In another hour I'll be on stage for the second house. They're more critical, and I have to be almost dropping with weariness to impress them. It doesn't seem to affect my manipulations."

He rolled billiard balls out of nowhere and dropped them clattering in a fountain of red and white into a box on the floor. "How long have you been having these nightmares?"

"Three months."

"Umph. Being starved of sleep in that way is even worse than starving yourself. I

know." He took another pull on his cigarette.

Michel suddenly felt an access of self-reprehension. He said: "Look, I oughtn't to be trespassing on your time this way. You ought to get some rest—I mean, it's not as if you were a doctor I was consulting. I've no right to ask you to do this." He half rose.

Montague had closed his eyes. He said: "I'm offering to help. You aren't asking. But if you think it's wrong, you might at least stay and talk to me for a while. I think you could be more interesting than Joe."

"Joe?"

"The doorkeeper. He can talk nothing but football and racing. I usually chat with him between shows, but he gets on my nerves—what nerves I have left."

Michel settled back into his chair. After all, the only alternatives were a place of entertainment, walking the streets, and sleep—and he couldn't face the last till he was dropping. He said: "How

long have you had this power?"

"About two years. It grows stronger as I use it more."

"But how come you use it in *this* way?"

"Easy money," said Montague, bluntly. "I can't work at any form of manual labour—I haven't the physique. I can't stand desk work. I have to eat."

"But—conjuring?"

"I did amateur conjuring before I developed the talent. When I was in hospital last summer I practised and brought it to a fine art."

He picked up a pack of cards and sorted them into suits by touch, while Michel looked at the pallid handsomeness of his face and thought: "Of course. T.B. This man will be dead in two years, through too much work—and too much smoking."

The magician continued, eyes closed, as if he were talking to himself: "I tried fortune-telling for a while. I told fat and wealthy women what they wanted to be told,

and they thought it genuine prophecy, and I made a lot of money. A *lot* of money, it seemed—more than I get from fifth-rate theatres like this one. But I had an upsetting experience and gave it up."

"Why?"

"I contacted a genuinely disembodied spirit," said Montague, opening his eyes. "Don't bother to argue about it. I did. And I gave up fortune telling shortly afterwards."

Michel glanced at him a trifle suspiciously, but relaxed. There was no doubt this man had extraordinary powers——

"Guiscard! I think I've found him."

"Good work, young man. Where is he?"

"There's a baffle round him. I think one of the opposition's got at him."

"Oh no! Guiscard, what on earth do we do?"

"Keep our heads as a start, Marcia. And see if the baffle's a tough one."

"No, it's not very tough.

It looks to me like an ordinary reflex action, like the one you might put up to screen a casual conversation."

"That means whoever it is either hasn't a great deal of power, or hasn't any idea that one of us has got at him."

"You have a perfect genius for stating the obvious, Marcia. How could the opposition know that one of us had got at him, when the one of us who did get at him wasn't one of us till after it happened?"

Marcia digested that in slightly sulky silence.

"Can you penetrate the baffle without him noticing, Guiscard?"

"Sorry—I've been trying. No soap. He's in a heightened nervous state. Over-tiredness, too much smoking."

"The opposition must be in pretty bad shape."

"Marcia, my dear, you forget the opposition may not know how much *he* knows. Naturally they'd use an extreme sensitive without a great deal of experience."

"Philip, I respect your superior experience. I bow to your superior knowledge. I even kowtow to your superior ability. But *please* don't waste time expounding the obvious to us. Even I saw that."

"Stop bickering, Marcia, Guiscard. What do we do now?"

"Young man, pick him up when the opposition drops its baffle. Get him away by himself and shut yourselves in. Then——"

THE TALK drifted through spiritualism to the subject of Michel's nightmares, without the latter realising it. When he did, he had described and analysed his reactions to the dreams in full. Montague nodded thoughtfully when he had finished.

He said: "I'm very sorry to disappoint you. I don't think I can do anything for you. To judge from your descriptions, the dreams are the result of something infinitely more fundamental than I can

reach with my limited powers. It's so masked by its effect on your conscious mind that I can't penetrate. The best I can do is to suggest that you see a really competent psychiatrist. He may be able to help."

There were overtones in his voice which suggested that he strongly doubted it.

At that moment the door opened and a pretty girl came in. She looked curiously at Michel, bent over Montague and kissed his pale lips. He opened his strangely dark eyes—they looked like polished ebony in his pale face—and said: "Hullo, Muriel. How's life?"

Michel said: "I think I'll be running along, Montague. I'm sorry to have taken up your time——"

Montague smiled without amusement. He shut his eyes again. Muriel sat down beside him and put her arms around his neck. She looked at Michel with annoyance.

"Don't worry," said the magician. "I found it *very*

interesting. Oh, by the way——"

Michel paused on the threshold. "Yes?"

"Did you ever try bibliomancy?"

"How much?"

"Divination by chance passages of scripture, according to the dictionary. A hangover from my fortune telling days. Try it some time. I rather think that, for you, there's something interesting on hand."

Michel closed the door quietly.

"Baffle's down."

"Okay. Where are you?"

"In the doorway of a shop about three hundred yards down the road. If someone will take a look at whoever it was who had the baffle up, I'll latch on to Michel."

"Right," from Guiscard.

"He's new to me. You—Clairmont—Marcia?"

"No."

"Nope."

"Poor fish," put in Marcia, as an additional qualification.

"I rather agree. The opposition got at him at a peculiarly susceptible moment. Incidentally, that was a really lovely bit of suggestion work they did on Michel. I bet he doesn't even suspect he was being prompted."

"He doesn't." This from the man shadowing Michel. "They took a preliminary look at him and underestimated his sensitivity. He did get an inkling when they planted the name Quonsett last night, but they did a better job this evening, with more respect for his intelligence."

"Rather a pity." Marcia again. "It would really have put the skids under them if he'd bushed them himself."

"Can't be helped." Guiscard shrugged, expressively.

Every few yards after he left the theatre Michel glanced back over his shoulder. He felt that he was being followed, but every time he looked around he saw nothing to support the suspicion. There

were a good many people about, for it was fine and warm and not yet dark. No one was specifically following him.

He felt uneasy. Montague's uncanny powers had had a curious effect on him. That morning, when the strange idea had come to him that there was a plan behind his inheritance, he had had a sudden impression of contact with forces a little outside his experience. His meeting with Montague had brought it on with renewed strength.

Giving a final quick glance back, he turned into the crowded and smoky bar of a pub and ordered whiskey and a chaser.

"Gone to earth in a pub."

"Get him out of there as soon as you can. I should think his own rooms would be the best place to see him—that, or a deserted street."

"Okay, Guiscard."

"Clairmont, you were looking after Montague. What about him?"

"He pushed the relevant

information—what he had to tell his superiors—into the mind of a low-order intelligence girl named Muriel Planter, without her knowledge. Marcia's trying to find her now, but we didn't realise what was happening till she'd been out of our surveillance for twenty minutes, at least. In that time *anyone* might have picked her brains."

"Clever. Well, what have you got about Montague himself?"

"Next to nothing. He's a first-order sensitive—at least as good as I am—and intelligent into the bargain."

"Listen to him blowing his own trumpet!"

"Shut up, Marcia. We'll just have to wait till he goes to sleep, and even then there's a chance he'll get a carry-over of the probe into his dreams and recognise it."

"Mm." Guiscard now. "Do your best anyhow. And don't forget, all of you—the most important single item in this business is—who's the general of the opposition?"

"Michel will lead us to him," pointed out Marcia.

"And do you think they don't realise that? What do you think is the reason for the dreams Michel's been having? To tip him over the edge where he won't be any use to us, of course. Why, ever since the general of the opposition—for convenience, we'll assume it is he in person——"

"It was last time," interjected Clairmont.

"It needn't necessarily be this time. But if it is, we can assume that as soon as he discovered there existed a mind in resonance with his own he began trying to prevent the other person—to wit, Michel—becoming aware of it."

"He's been disgustingly clumsy if that was his aim," objected Marcia. "Those dreams would indicate the exact reverse."

"To someone who had not the faintest knowledge of us nor of the current crisis? Don't be silly, Marcia. Michel

thought they sprang from his own subconscious."

"He still does. Damn. I can't get him to shift from this pub. There's at least one potential sensitive in the crowd—name, Peter Mac-Donough; address, 13, Kirby Road, N.15—whom I'd advise you to contact before the opposition opens him up—and I can't go chucking stray commands at Michel with him around. As I was saying: He still thinks they're rooted in his own mind. He's beginning to fear for his sanity."

"They sure have it in for that poor boy," acknowledged Marcia.

"Naturally," Clairmont stated, dryly. "Guiscard, Montague's finished his second show for the evening. I spotted he was using his mind-reading act incidentally to try to trace new sensitives for the opposition."

"Neat," admitted Guiscard. "Go on."

"I'm afraid he may have spotted my baffle, though the moment I spotted his game I

dropped it on the double. If he didn't, he has a sweet picture of me as an undeveloped sensitive, wide open to recruitment. Oh—oh boy, what a stroke of luck!"

"Explain."

"Montague's dropping with fatigue. He just fainted—right under a cyclist. Diagnosis—broken leg and concussion. When the doctors see his physical condition, they'll immobilise him, and I can pick at an unconscious mind without fear of detection. This is less risky than probing in his sleep."

"Immobilise him?" queried Marcia. "Not for long, surely? You said he was first-order sensitive——"

"*But* he has galloping consumption——"

"Sorry," said Marcia, amusedly. "I was forgetting he wasn't an immortal."

"Michel's moving," reported the latter's shadow. "I think he's going home."

Michel still felt uneasy as he left the pub and began to

walk through the cooling streets towards his rooms—a mile or so distant. Again there was the indefinable sense of someone following him. He quickened his pace and made an unnecessary detour. But he could not shake his shadow.

Not unnaturally, since those following did not need to track him by sight.

He reached his rooming house and let himself in, quietly. For a moment he stood in the dusky Victorian hallway, with the Landseer on his left and the stag's head hatrack on his right. Irene, her golden head bobbing above her severe black dress and white, lace-edged apron, came from the kitchen with a tray, and smiled dazzlingly on seeing him.

"Hullo, Mr. Michel," she said. "Did you see the doctor?"

Preoccupied, Michel took a moment to assimilate the question properly. Then he nodded. "Oh yes. Yes, I did."

"Is he going to cure your nightmares?"

He wondered for the first time how old Irene was. She couldn't have been more than sixteen, he suddenly realised. There was something absorbingly child-like in her pretty face that he had never before noticed.

He smiled. "He'll do his best, I suppose."

There was the sound of a bell being rung with vigour and impatience, and Irene started guiltily. She smiled at him with the air of a conspirator sharing a secret, and made hastily for the drawing room door across the hall, while Michel went on up to his room.

Before he drew the curtains, he stood looking out of the window at the lights of London, listening to the noise of the late evening traffic. After a few minutes he shut the window, stopping the noise, pulled the curtains and turned on the radio.

He brought in a programme from somewhere the far side

of Europe, featuring some noisy swing group he didn't even attempt to identify, and lit a cigarette. As he man-handled his big armchair into a comfortable position, his eye fell on a book in the shelves beside it that had been there since he moved in. A New Testament.

Feeling a slight fool, he reached across the chair and pulled the little volume from the shelf. As he blew the dust from it, he again had the impression that he was being watched. He looked around sharply. No one. Nothing.

Now: how——? Oh yes. Shut your eyes, let the book fall open on the table, and put your finger on a spot on one of the pages. Right.

He shut his eyes and let the testament drop, stabbed at it with a stiff forefinger. When he looked at the reference he had chanced upon, a cold chill seemed suddenly to walk up and down his spine.

It said: *There shall be weeping and gnashing of teeth.*

For a long minute he stood, with his finger on the page, thinking. Coincidence or not, it was a damned uncomfortable sort of prophecy to find oneself lumbered with.

He went down behind the armchair to the bottom bookshelf and pulled out a complete Bible, weighing about eight pounds, which had belonged to his grandfather—the same who had jumped off Hammersmith Bridge. He closed his eyes and made the fresh attempt.

Again—his finger was against the words: *There shall be weeping and gnashing of teeth.*

He was startled to find himself so tense that he was trembling.

A knock sounded at the door. He collected himself, said: "Come in."

It was Irene. She said: "There's a Mr. Prentiss to see you, Mr. Michel."

"Prentiss?" He looked puzzled. "I don't know anyone by that name."

"He says he's a friend of

Richard Montague." She stumbled a little over the name.

"All right. I suppose you'd better send him up."

She vanished, leaving the door slightly ajar. Michel stood with one hand on the open book before him, wondering with a slight frown what this unknown visitor could want. The swing group on the continental programme expired in a discordant noise that was mostly atmospheric, and he put out a hand mechanically to turn it off. A friend of Montague—?

"Not a friend of Montague. Sorry."

Roger Prentiss pushed the door shut behind him. He was tallish and dark, rather sallow. His hands, Michel noticed at once, were like a musician's. He said: "You're the bank clerk who—"

Prentiss nodded. He said: "Maybe you recognise my voice too."

Curiously, Michel nodded. He said: "Of course. I heard you speak—"

And stopped, his mouth

half open in astonishment. This voice——

"*You* spoke to me—at Dr. Quonsett's?"

Prentiss nodded. "It was a clumsy and risky expedient, I admit now. Still, it's gone undetected so far—I hope. I also suggested, as you might say, that you make out a cheque for two hundred pounds instead of twenty, because it may come in handy for immediate expenses when we get you away from here—if we can get you away from here, which I am beginning to doubt."

Michel was frankly staring. Prentiss noticed his astonishment, and half chuckled. He said: "I'm sorry. I forgot, you're even more in the dark than I was at three o'clock this afternoon, and I had then no faintest idea either whom I was fighting or even that I was fighting at all. I'll explain. D'you mind if I sit down? No, I won't deprive you of the armchair."

He came around the table to the straight-backed chair

Michel indicated numbly, and pulled it out. Meanwhile, Michel looked around with a worried air. Prentiss's eye fell casually on the Bible on the table.

He said: "You—oh. Bibliomancy?"

"How did you guess?" said Michel, looking distraught.

"What did you get?"

"That there shall be weeping and gnashing of teeth."

"Montague's idea of a joke," said Prentiss, dryly. "Is that all that's the matter?"

"No. No—I have the damndest feeling that we're being watched."

"Guiscard! Clairmont! Marcia! They know I got to Michel."

"How?" in three shocked voices.

"They must have someone watching the house. Hell and damnation! I was hoping that they'd not be around when I came to call—that I could tell him all about it verbally and never let them suspect I was one of us.

"Instead of which, they've probably been watching him since he quit the theatre without my noticing it. Clairmont, did Montague know?"

"No. He knows about what we know regarding the top men of the opposition. He's only useful to them as a probe—knows nothing that could be of use if he was got at."

"I've just shoved up the biggest baffle I can lay on, and still think sanely. Hoping—against hope—that I can tell him what he needs to know before the opposition move!"

"Now what do we do?" demanded Marcia, helplessly.

"You can get on to Duplessis and Savigny in Paris—have them take the next plane over. God, for Cletron now! The only true teleport in existence, and he had to stop one in the blitz. Clairmont, forget about Montague. Michel is the big man here and now. You're coming down with me to Penshurst Street. I doubt if we can do anything but try——"

"CAN YOU STILL FEEL IT?" demanded Prentiss. Michel, uncomprehending, shook his head.

"Good. Now I know you want to ask ten thousand questions. You can't. I'm sorry. You're going to listen as if your life depended on it. It doesn't, I'm pretty certain; but your sanity does, and if you value your sanity less than your life you're a fool."

"But——"

"Shut up. I have ten minutes at least. I may have as much as an hour if I'm lucky. If I can't tell you the gist of it inside that time, we're sunk. How old do you think I am?"

"Why—why——" Michel was caught off balance by the suddenness of the question. "About twenty-five or six, I should say."

"I'm forty-two. I doubt if I'll look older than I do now for another seven or eight hundred years. I'm immortal. I'm also a natural telepath."

"What?"

"You're disbelieving but

open to conviction, and blind jealous with an instinctive and overwhelming envy. There's no need for that. Apart from haggardness, caused by lack of sleep, you look around twenty-two. You're thirty. You're probably as immortal as your father—who was also four times further back, others of your ancestors."

"Incest?"

"Incest loses its meaning in a case like his. The prejudice against it stems purely from a fear of reinforcing genetic weaknesses present in near relations by doubling them. Your father had a set of genes that were completely unique. They entered your line five times. The end result is that you—yes, you, August Michel—are the most important single person in the world. You have every one of his faculties and maybe more—though you haven't developed them yet.

"Sit down and listen.

"When you came into my bank this afternoon I was

struck by something rather queer about you. Though I am telepathic, the sense is very tiring to use, except with other telepaths—we call them 'sensitives'—and most of them have never had the faculty developed and instinctively resist any attempt at contact. But you, I noticed at once, were unusual. So I probed your mind casually—without malice, you understand—and found, not *one* mind, but *two*. Your mind, one might say, is tuned to someone else's. Don't ask me how this is possible now.

"In short, I took a sample of your thoughts. They appalled me. The person who is in resonance with you was steadily attempting to drive you insane. Can you feel those dream-images now?"

Astonished, Michel tentatively relaxed his will, half afraid of renewing conscious contact with those horrors. After a moment, he shut his eyes and concentrated. When he opened them again, they were shining. He shook

his head. "How do you do it?"

"I've got a high-powered baffle round the room that nothing short of a dozen minds, working in concert, could force down. I also got overtones of other information, and when I put it together I went to my rooms as soon as the bank shut, and started looking for another sensitive on the developed level.

"I was lucky. I got hold of a man named Guiscard—Philip Guiscard—almost immediately. He is the leading sensitive in Britain, and almost seven hundred years old. He confirmed what your mind had told me.

"Broadly speaking there are two types and two parties among the sensitives. First you'll have to accept that the sensitives, in spite of being fantastically in a minority, control humanity. A demagogue with a sensitive mind can convert more people than one who can only rant. You see? But we don't work so blatantly, normally.

"The two types of sensitives

are the immortals and those who are merely sensitive. The mutation is a curious one, and Savigny—the French biologist—is still trying to classify it. It's super-recessive and yet becomes unexpectedly dominant under certain circumstances. It won't repeat in the next generation, even if both the parents are immortals, but it sometimes appears in the children of people who have as little as one sixty-fourth sensitive ancestry. If both parents have the tinge and it shows up, it will cause an immortal. If only one—then an ordinary sensitive. Or, more often, neither. Those whose mutation is carried single, die like anyone else, but we who are immortal have our minds so stepped up by it that we can control what is normally subconscious activity—the heart's beating, the accumulation of aging products in the body tissues. Montague, the fortune teller and conjurer, is an example of an ordinary sensitive.

"The two *parties* among the sensitives are quite different. You can only understand them and their existence if you realise that the human race is slowly developing superconsciousness—self-awareness as a racial entity. Thus you can compare the vast mass of the people to the individual cells of the brain, each a repository of sensation, information, *et al.*—useless without some form of linkage and co-ordination. Ordinary sensitives might be said to represent the cells which will eventually enable superconsciousness to provide that linkage. We, the immortals, represent the main drives of the race. We brought men out of the caves. Yes! We weren't true immortals then, of course, only very long-lived. Such people still occur in primitive tribes in Africa and elsewhere—witch doctors, usually, who live to be about three hundred years old. The first immortal, properly speaking, was born less than a thousand

years ago; but it was we sensitives who built Babylon and the civilisations of Egypt—Greece—Rome. The lot, in short. We pulled humanity part way out of the slime and hope to get it further.

"That's us—the survival drive. The libido, in psychological terms. But there is always the mortido, or death-urge, too. You know the theory? The libido seeks nirvana through the throwing down of all opposition. The mortido seeks it in oblivion. And *that*, you see, is why Rome and Greece and Egypt followed Babylon into the dust of ages, and why our present civilization is on the verge of global self-destruction. In case you're interested, by the way, there never was an Atlantis.

"Well, this shapeless, unintelligent, unaware foetus of something truly great that is the human race, undergoes cycles of dominance of one drive and another, and since the race is not yet exactly sane, collectively speaking,

there are occasional crises in the mass-mind, when the mortido threatens permanently to disrupt our unsure unification of humanity, and plunge it back into the mire. There've been three such to date: one in the middle of the first ten centuries A.D., after the crash of Rome; one in the mid-seventeenth century, which included the French Revolution and the Napoleonic Wars; and the two wars just over. That one's still running! With the increasing potency of the means of destruction made available to the mortido by our scientific progress, the periods of destruction and dissolution grow shorter—but also more frequent. If the current one isn't the last, it's the next to last. We've got to get around it, Michel. We have *got* to deal the opposition a blow that will cripple them for long enough to stop them being a menace to the final evolution of superconsciousness—or better, permanently. You see?

"Where do you come in? Well, you had a very extraordinary ancestor in Pierre Michel. He was more or less the leading sensitive in the world when he was in his prime. Though he was younger than Duplessis or Centmarche, he was the main reason why the blood-lust of the French Revolution didn't spread all over Europe during the mid-millennium crisis. And the reason for that was that he, though himself dominated by the survival drive, had access to the mortido of the race's subconscious—or preconscious, rather. In short, the opposition could not baffle him out.

"He knew that more crises threatened. He saw that his children didn't inherit the faculty. He knew that the opposition might dispose of him before the next crisis, and of course he was as liable to accident as anyone, which would deprive us of our one real weapon. So he watched, and waited, and

maintained his line of descendants in case one of them should inherit his powers. You are the end-product.

"There wasn't a real organisation behind us till the middle of the last crisis. We patched it together by bits and pieces, and between the wars we became thoroughly geared up—and so, we believe, did the opposition. But by then we'd lost your father—sheer accident, of course—and had lost track of you. You were undeveloped, one among hundreds of thousands—lost to us.

"Well, we've found you. And you aren't developed yet! It looks as if the opposition got at you first—those nightmares, you understand? An attempt to drive you insane without our finding out, and without our being able to utilise the fact of your being the *only* linkage between the two opposed drives of the human race. Get this straight: owing to the genetic formation you're endowed with, you're irreme-

diably attuned—telepathically speaking—to one of the senior members of the opposition. Who, we can't tell yet, but he may be their equivalent of Guiscard. He can't block you out, but you're not yet capable of using your position. Your abilities won't develop till a year or more hence. Got that?" Prentiss was wearying visibly. Sweat beaded his forehead and hands; his voice, racing at double its normal tempo, quivered uncontrollably. Words tumbled out. Michel sat opposite him, absorbed.

"But so long as we have you, we've a link to that high-up on the other side. Since they've been planning this for years and we only learnt your whereabouts today, and by chance at that, and also because we weren't expecting the position to extend this crisis again, we may not be able to hang onto you. All we can do is tell you how much you mean to tomorrow.

"We've used up double the

time I hoped for. Fine. One thing more I can do for you. I'm afraid that the opposition *know* that we know of your existence, so they will stop trying to hide what they are doing. They will probably try a smash and grab. They won't want to kill you—an immortal dislikes being hanged by the neck as much as the next man—but there's no normal manner of proving that anyone was responsible for driving a man insane. You see? So remember—*he* can't put up a baffle against you; *you* can, against him."

"Are we in time?"

"Heaven knows. No! By God, they're here. Must be dozens of them. Mostly ordinary sensitives, but there are two immortals as well."

"Oh no! What wouldn't I give for that many of us?"

"Well, we haven't got them here. Gods! To think that so many ordinary sensitives go over to the opposition simply out of jealousy against the immortals, figuring it

better to drag down those on their own side by supporting oblivion."

"Now I'll tell you how to put up a baffle. *Don't* attempt to use it against the man you're tuned to till you're fully competent, telepathically, because it'll be infinitely harder to break that resonance than an ordinary one. Remember, though, he can never block you out by any means." Prentiss stiffened suddenly in his seat.

"They're just beginning to test my baffle. Quickly. Get this." Each word was an effort now. His hands clenched spasmodically with the tremendous concentration. "Imagine yourself in a vast, black cave. Blackness on all sides. Got that? Make it *real* to yourself. Keep only a tiny bubble of light in it—that's you.

"When you can *feel* that blackness around you, and only see and hear the physical world within it, you have an efficient baffle. Remember!"

"They're trying to get through his baffle, Guiscard."

"I know. Considering he only joined us this afternoon his ability is fantastic. You heard his plans for his own development?"

"I did. I've rarely found anyone so satisfied with the gift of sensitivity. I know that I myself was still dreaming of power and wealth at his age. To be content to let his powers mature to fruition even before looking for others of his kind——"

"We're losing a good man, Clairmont."

"*Losing?*"

"Losing. They're at his baffle now. He isn't dropping it."

"I'll remember," declared Michel. "I don't know why I believe you, but I do."

"That's fine. Okay, they're coming—the opposition. They won't harm you so long as our people are on watch—and that means permanently. Don't worry. The drive to survive will come out on top." He was almost gabbling

now. Suddenly, though, his face relaxed into a smile of contentment, and his voice, when he spoke again, was level and calm.

"Goodbye, Michel. I won't be seeing you again—at least, not to know it."

"What do you mean?" demanded Michel, starting up from his chair.

At the same moment, two things happened. The sensation of being watched, together with the nightmare impressions that had been cleared, temporarily, from his mind, returned with redoubled power, and Prentiss collapsed in his chair, his face slackened, and took on the aspect of a mindless idiot.

"Yes, Guiscard, we've lost him. The baffle is down."

"There they go." Guiscard stared sombrely at the dark figures who walked casually along the street. A black saloon car with blinds down in the rear windows slid to a purring stop in front of the boarding house.

"As soon as they've gone, go in and see what you can do for Prentiss. It probably won't be much, but do as much as you can."

"Okay. You?"

"I'll be tracking them. Quite discreetly, you understand. Marcia is bringing a car round."

"It had better be fast. That's one of the Jaguar saloons that hold all those records."

Guiscard laughed. "Did you ever see a Vauxhall Fourteen that could keep on the tail of a Jag?"

"No."

"Nor did the opposition. That's why we won't be spotted. We can change the number plate occasionally, too."

"All right. Things are happening, Guiscard."

Almost directly on the heels of Prentiss's astonishing collapse there was a creaking footfall on the landing outside, and the door flew open. Michel whirled round as a

cosh came down across his forehead and scalp. It was like a blinding light, that left only darkness when it went away.

"All right. They've got him. Gods! If only we had their numbers."

"Look! Both the immortals are riding with him."

"And one sensitive, and *another* sensitive driving. They have a high opinion of Michel, evidently."

"Higher than deserved. But Prentiss must have put up a hell of a fight. The guy who went in is as stiff as a board."

"Well, that leaves you a reasonably easy job. Here comes Marcia now."

An ugly, battered, very ordinary family saloon, about fourteen or fifteen years old, pulled up beside them, a thin woman, with wire-rimmed glasses and a school-marmish hair-do, at the wheel. Ahead, the Jag turned out of the street.

"Good luck, Clairmont," said Guiscard, getting in.

Before the other could reply, Marcia had taken her foot off the clutch and the car was away. He watched them go, grinning. She was into top gear by the time she pulled around the corner, and thereafter she and Guiscard would follow the baffle put up by the passengers in the other car, like bees following honey.

He sighed and turned around, gauging the quality of the opposition sensitives walking casually away. They were all young and untrained—people whom the opposition considered expendable—but they nonetheless held the potentialities of menace. He estimated their resistance swiftly, decided he could cope with them, and flicked bolts of blinding mental lightning at their retreating minds. They stiffened into automata, walking like machines, till their paralysed consciousnesses should awaken into fresh awareness.

Then he made his unhurried way along the Victorian fronts of the houses, feeling gently

for the minds of the lodgers in the boarding house. They still bore the signs of the numbing fields the kidnapper had used to shield his entrance and exit, but he could contact them all right.

He punched the impression of a blood-curdling scream into their aural centres and bounded up the steps, opened the door. The people in the house were already crowding into the hall.

He said: "Excuse me. Did I hear someone scream?"

The grey-haired dowager of a landlady said: "*Who* can it be?" and the pretty, yellow-haired maid said: "Everybody's here but Mr. Michel!"

A slightly self-important, middle-aged man went up the stairs in a panting hurry, and was heard to knock on a door and then to open it. A gasp that was almost a groan; and when he reappeared, his florid face was pale and drawn.

He said: "I think—we'd better—get a doctor. Or something."

"I have some medical know-

ledge," offered Clairmont at once. He pushed through them and went up the stairs by threes.

When he opened the door he got the biggest shock he had had in years.

The face of the man sprawled in the big armchair, looselipped and vacant, was the face of August Michel.

He regarded him thoughtfully. So that was why the immortal had been so beaten when he left with Michel. He pressed one finger to the cheekbones that had been so distinctive in Prentiss's face. Soft. And the fingertips were raw and red. He'd been thorough, this man.

Furthermore, he was exceptionally able. To practise psycho-surgery on a man just rendered next to mindless by the forced penetration of his baffle, smacked of the impossible.

But nothing, now, could be done for Roger Prentiss. Except——

He flung an electrifying jolt into the caverns of the

imbecile mind. He had to preserve the belief in Michel's existence. If, as the opposition plainly intended, "Michel" were placed in an asylum, they could do with the real Michel as they liked. It was essential—

So long as the new tissues were soft—

It didn't have to be Prentiss's original face. Just something distinct from Michel's—

Where the hell had he knocked that pain-image to?

When he finished, neither Prentiss's employers nor Michel's friends would have recognised the face he had invented. But "Michel" was not going to be incarcerated in an asylum.

Satisfied—but almost as weary as the kidnapper—he made his way out, casually erasing the memory of his presence from the brains of those who had seen him.

"That's damned clever," Guiscard admitted, dryly. "It was just as well you managed to fix matters before you left."

"Where are you?"

"Heading north, out of town. I'll keep you posted."

Michel awoke to the jolting of a well-sprung car over an appalling stretch of road. There were blinds over the windows, but it was plain that it was light outside—a thin, watery, leaden light, like early dawn.

He groaned and shifted slightly. The mark of the cosh had come up in angry red and blue across his forehead, and ached foully. When he had the pain under control, he began to evaluate his surroundings.

He was on the back seat of the car, between two men, uniformly pale, dark, with brilliant, tired eyes which reminded him of Richard Montague, but otherwise quite unlike—too unlike ever to be confused. They sat in perfect stillness and waxen concentration. He looked from one to the other in astonishment, and then guessed that they were en-

gaged in maintaining a baffle around the car.

But the murmuring nightmare in his brain was faint still, which meant that neither of them was the mysterious member of the opposition with whom his brain was said to be *en rapport*. He looked curiously at them again.

Eventually, the one on the left stirred slightly, and glanced at him. His eyes were deep-set on either side of a sharp, short nose that made his face look compressed from top to bottom in front of his head. He said: "Enoch, he isn't even attempting to push anything out."

The other one, without turning, said: "So maybe he wasn't bluffing after all. Good. That means the opposition hasn't merely been holding him out as bait."

"From what I dragged out of the mess we left in Prentiss's mind, they didn't even know about him—or rather, of his location—till yesterday. And Prentiss, unfortunately, was about as integral a part

of their organisation as Montague is of ours."

"You don't say. He fought like an immortal."

"He was one. But young, yet. Forty-two."

"I see." Enoch turned thoughtful eyes on Michel. "And him?"

"Thirty."

"Fine. Then it's unlikely that his abilities have developed even rudimentarily yet. We can relax."

"Anyone on our tracks?"

"Look out, Marcia. They're dropping their baffle."

"I know."

"NO ONE BUT A MIDDLE-AGED couple in a fifth-rate Vaux."

"That's a relief." Enoch relaxed visibly, and felt in one of the inside pockets of his jacket. "Cigarette, Murphy?"

"Thanks." Murphy took one, lit it thoughtfully, his eyes on Michel.

Torn between the pain of the bruise on his head, which made him irritable, heightened by the dim return of the

nightmares below the border of consciousness, and the terrifying knowledge that these people and others like them had the power to make all the struggles of men an empty mockery, Michel fought his voice to a calm and steady level beneath which anger burned like a hot flame.

He said: "Stop looking at me as if I were prize cattle and tell me what the hell you think you're doing."

"Have a cigarette," said Enoch, infuriatingly. Michel took it, after clapping both hands to his pockets and discovering that he had left his own case in his room.

As he puffed it into life, Enoch added: "Prize cattle isn't so bad a description of you, really. You can console yourself with the reflection that you're the greatest prize of this or any war."

"What are you going to do?"

"Put you somewhere where you will tantalise the opposition, of course. If we can, we'll destroy your, as yet

unrealised, powers. If we can't do that, we can at least have you somewhere where you can do us no harm when they do develop. Without you, of course, the opposition is fighting in the dark—and they are squeamish. They are handicapped, as we are not, by a desire to preserve the common run of humanity."

"Handicapped you call it!"

"See?" said the man named Murphy. "What did I tell you? His father's genetic prejudice to the libido. What can you do with a man like that?"

"Nothing," admitted Enoch.

The cigarette began to quieten Michel's jangling nerves. He said, almost with interest: "What makes you oppose the men who want to lift our race above the level of the beast?"

"I think we can let the blinds up now, Murphy. Because we're realists, Michel, and yet also idealists in a way."

The blinds went up. He saw that there were two men

in front, one drowsing, the other driving. The countryside through which they were passing was steep and hilly. He didn't recognise it.

"I should have thought the blindest fool would have thought otherwise. You're the negation of man's every drive to survive."

"That's true enough. We are. And we're proud of it! Because the urge to survive, as you put it, is all that is most beastly in man! It is blind, unthinking multiplication. It is wars, pestilence, too many people and too little food. It is slums and overcrowding and plague, and tens of millions of blind, crawling worms, deluding themselves that they are important to the scheme of things." He stared at the road ahead with blazing eyes.

Enoch said quietly: "Michel, if it were in your power to put an end to all that misery—forever, to correct one blind, horrifying mistake of creation, wouldn't you take the chance?"

Almost, in that instant, he respected their viewpoint. But not quite, because, though his mind was attuned to that of one of the enemy, it was nonetheless dominated by the libido—the drive to survive.

"No!"

They shrugged. The man beside the driver stirred uneasily in his sleep at the vehement exclamation.

"No, because there is a price for everything, and misery for us today is a small price for the glory which could be."

"A dream," Enoch dismissed it. "An empty phantom. So much misery is too much to stake on the promise of an unfulfilled future."

"You can't change a man's prejudices," shrugged Michel, giving in. Murphy deliberately missed the point.

"No," he sighed. "Or you would come around to our point of view."

"Damn. I'm sorry, Philip. I think we've lost them."

"Blast and damn. If they'd

kept their baffle up, we could have tracked it like a beacon. As it is, if I tried to pick up their thoughts—which in itself is absurd in a town the size of Manchester—they'd spot me and knock me for a loop. We'd probably wind up through a shop window."

"You seem very pessimistic."

"Marcia, they've got two of their positively best immortals in that car. You heard what one of them did to Prentiss. Psycho surgery on an imbecile is hard work."

"All right. If you say so."

She pulled the car into a sidestreet and sat disconsolately looking through the windscreen.

"Clairmont!"

"Listening."

"I'm here, too, Guiscard. So's Savigny."

"Well, I'm afraid you're too late, Duplessis. Nice to meet you again, of course."

"Bad news?"

"Very bad news. We've lost them."

"Where are you?"

"In a dismal sidestreet in Manchester."

"Raining?" With a chuckle. That was Savigny.

"No. But for all I care it can snow cheese. They've got Michel safely out of the way, and all we've gained from this skirmish is the knowledge that a catastrophic move is brewing, which the opposition have been planning for years."

Duplessis sounded thoughtful. He said: "I'm trespassing on your territory, Guiscard, but it seems to me that we must keep Michel alive—or at any rate, convey to the opposition the impression that a large number of unpleasant things will occur if they either undermine his sanity or put a positive end to his life."

"Agreed," nodded Clairmont, emphatically.

"Maybe if we found him again we'd be in a position to dictate," suggested Marcia, caustically.

"Maybe," Guiscard con-

curred, without enthusiasm. "Dugald, are you listening?"

"Of course. I'm not completely unmindful of my duties. You're coming closer to my territory now. What do you want done?"

"How soon can you raise a helicopter and fly south?"

"In about a quarter of an hour."

"There's a low cloud base today, so you'll have an excuse to keep down. I want you to watch the main roads leading north out of Manchester with a pair of binoculars—no probing. You're looking for a black Jaguar saloon, numbered QKX 2994. You should be in time—Manchester's tough to get through at speed."

"Sounds like a very poor bet, but I'll try it if you say so. I'm on my way."

They pulled up in a rather shoddy suburban road somewhere on the north side of a big industrial town. Michel demanded: "Where are we?"

"Manchester," said Enoch, opening his door. "Out."

Michel obeyed immediately, not quite knowing why but suspecting a command on the telepathic level from one or both of them, which was second nature with the issuing of any order. He went up the grimy steps of the nearest house, with Murphy ahead of him and Enoch behind. The heavy, ugly door swung dully shut behind him.

They took him up a flight of stairs and showed him into a small, windowless room, comfortably enough furnished, with a radiogram and a case of books, a bed, a table, a chair, washbasin and toilet, even pictures on the walls; but those walls were faced with blocks of solid, north-country slate, and the door, covered in metal plates and with a steel-covered lock, was set in a metal frame.

Finally, they pushed him into the middle of the room and stood side by side in the doorway, threatening.

Enoch said: "This room is

escape-proof. In case you were thinking of trying to get away, that is. Let me enumerate our precautions. Apart from the obvious ones—the walls and door—we have alarms on every floor, and sensitives posted on guard day and night in case you try to get in touch with one of your friends. And—did you know that there was a man named Cledron who, though of low intelligence, was a true telepot? He was killed in the late war. Well, in case you turn out to have TP tendencies, I'd better tell you that these walls are threaded with cable carrying two thousand volts, which not only stopped Cledron—it killed him."

He turned towards the door. Just before he went out, he glanced back over his shoulder with a wolfish grin. He said: "Goodbye!"

"Yes, that car you mentioned is coming out of Manchester. QKX 2994 you said?"

"Okay. We'll get through the town as fast as possible, and follow them. You must be tired, Marcia. Better let me drive."

"Not on your life, Philip. You know you're hopeless in traffic."

They left Michel alone, isolated from the rest of the world.

The nightmares were a long way away in Manchester, and only rarely seemed to get out of the control of his will. For that alone he was almost grateful to the men who held him.

But never completely.

He wasn't altogether unhappy. They provided him with newspapers, books, records; nor did they starve him. But he was horrified whenever he thought of what might be going on in this battle for the destiny of humanity.

"We found the car, Clairmont. Abandoned about five miles south of Glasgow."

"Which means Michel probably wasn't in it when it left Manchester. The chances are they got rid of him as soon as they'd shaken us safely."

"All right. We'll just have to start combing Manchester."

"What a job!"

"Savigny, it doesn't *always* rain in Manchester, you know."

Eventually, after about three months of solitary confinement, Michel found that he was starting to make sense out of the thoughts around him. His jailers weren't bothering to baffle him out all the time.

His mind was unfolding its latent faculties.

Very cautiously and tentatively he began to test the capabilities opening to him.

It fascinated him. The theory of the baffle he grasped quite simply. It was, in essence, a concentrated denial of reality outside the immediately visible neighbourhood. It was the only way to

block out telepathic calls—and even then one could only block out those which lacked the basic similarity of thought shared by members of one's own persuasion. It was also the reason why Prentiss's mind had given way when his baffle was forced down.

He was scared of trying at first; but after three months they had almost taken to ignoring him. An attempt at escape, or at communication with people outside, would have brought them down like a ton of bricks; but within his own four walls, it seemed he was at liberty—even of the mind.

"You're sure he's *in* Manchester?"

"Well, they certainly didn't drop him south of there." Tempers were beginning to fray after the long search. By now, Guiscard's associates had alerted the organisation all over the world, and parties of sensitives watched without ceasing for signs of a move by the opposition; but while

Michel was not known to be dead or insane, he still represented the key that would enable them to strike a crushing, an exterminating blow at their enemies.

Six months had gone by.

The problem of telepathy itself was more difficult, since he had to work exclusively on theory. Any attempt at actual communication would have aroused all his guards, but nonetheless he was getting to know his growing capabilities now.

"I think we've found him, Philip."

"About time."

"Yes. They have a guard around him that the mental impact of a dimwitted cockroach would alert."

"Attention, everybody. This is an *order*. We've got to figure out a way of getting through to Michel, or of getting him out without commotion. Nothing is more important than this."

Another six months had gone by.

He made several interesting discoveries in the next ten or eleven months.

"Still there, Marcia?"

"Still here. Any progress?"

"No."

After two years from the start of his imprisonment, he felt himself ready for an attempt at escape. What really triggered his decision was a sudden recurrence of his nightmares, which had been pressed further and further from his consciousness by the growing power of his mind. This time he was able to ignore them; but they sufficed to show him that the high-up in the opposition was actually near him now. This time, he realised, they were not a deliberate transmission, but only the manner in which his libido-prejudiced mind interpreted the ordinary unvoiced images which formed the "small-talk" of a mortido-prejudiced mind at rest.

It was then that he remembered something that

Prentiss had said. What was it? "Remember: *he* can't put up a baffle against you. *You* can, against him."

He closed his eyes and clenched his fists. The muscles of his jaw lumped in concentration. Then——

His baffle went up. The opposition could not get at his mind without first fighting it down—and that would take some while. At the same time, however, he still had access, through an unbreakable resonance, to one of the members of the opposition. And the enemy couldn't baffle out the thoughts of one dominated by the same drive as they themselves.

The mind that formed the other half of the linkage struggled furiously—and vainly. It relaxed, and his probe stabbed in. Checking only for a moment, he began to implant commands with a controlled frenzy.

When the key turned in the lock of the door, he walked out without looking at the face of the person with

whom he was *en rapport*. He'd known since he broke the resistance in her mind that it was Irene.

He spent a few more minutes taking certain precautions.

"Still there?"

"Still there. Any progress?"

"Like walking through a brick wall. Savigny thinks he may have something. It's liable to take a lot of working out, though."

"Well, it's been twenty-nine months, more or less, to date, Philip. Neither side moving—it's getting me down."

"I quite agree. But it goes to show they must know of some flaw in their defences of Michel, or they'd act right away. As it is, we've found no more than ordinary activity. Therefore, they aren't prepared to go into action so long as there's any chance of our sneaking Michel back."

"Of course, they could be merely tying up our defences, you know."

"And their own too? But that worries me, I must admit."

Clairmont interrupted: "I don't suppose it's occurred to either of you bright sparks that *Michel* may have something to do with their inactivity?"

"How?" demanded Guiscard.

"Well, he's been there nearly two and a half years. As far as the opposition are concerned, they're sitting on a barrel of gunpowder with the fuse lit. His mental powers must be developing—and don't forget he was potentially the equal of the best of us, what with the unique genetic pattern his father gave him. Think it over."

"Congratulations, Clairmont." That was Duplessis—dryly.

"Why?"

"Your guess was quite correct. Michel isn't here."

"What?"

"He isn't here," repeated Duplessis, patiently.

"How on earth did they get him out of there without our noticing?"

"They didn't. At least, not according to what I've just probed for. May I congratulate you again on the accuracy of your surmise that he was responsible for the opposition's inactivity?"

"How's that?"

"They," explained Duplessis, "think that he's still where they left him—which he isn't. We've been believing that they had him safely imprisoned. The result is that we've been sitting looking at opposite sides of a brick wall for—however long it is since he escaped."

Guiscard, outwardly fat and fifty, sat frowning into a log fire, his right hand firmly grasping a cigar. Marcia had the chair opposite, her prim lips set, her grey hair swept back into the perennial bun. Clairmont too was there, with Savigny, Duplessis, Dugald—all the important members of their party, all those

now comprising the libido of the foetal superconsciousness in north-western Europe.

The question was: How soon would the opposition discover that they did not hold Michel?

And another question was: Where was he? Why hadn't he come to them when he escaped?

They sat in silence, almost undisturbed, their busy minds weaving a complex pattern of wonder. At length they were interrupted by the quiet entry of a maid. She said: "There's a Miss Ray to see you, Mr. Guiscard."

Guiscard looked up from the fire. "Miss Ray? I don't think I know——"

Clairmont flung up his head like a hound-dog that has caught a scent, and Guiscard glanced at him.

"She's very important," he stated significantly. "She may even be *the* link——"

"*She?*"

"She," confirmed Clairmont.

Guiscard began to smile,

gently. "Show her in," he said.

Miss Ray looked about sixteen. She might have been beautiful. Her hair was gold and her eyes were blue. But if you looked closely enough into those eyes, you saw the reflection of an ageless antiquity. She was an immortal, whose control over her bodily development was such that she had maintained her apparent age at about sixteen, as Guiscard his at fifty, Marcia at a little over forty, Prentiss at fifteen years less than that. And now that she was vibrating with an almost uncontrollable rage, her lips were drawn back from her teeth in a feral snarl that might have been the laugh of a hungry tiger.

If Roger Prentiss had been there, he might have recognised an image from Michel's early nightmares.

She came into the room slowly, eyes blazing, said: "If I knew why I came here——" The maid opened the door again, said in mild astonish-

ment: "A Mr. Michel to see you, sir, and two other gentlemen."

"Michel!" ejaculated Guiscard and Irene Ray almost simultaneously, but only Guiscard completed the speech.

"Bring him in!" he commanded.

The Michel who came through the door then, followed by the two dark-haired immortals whose names were Enoch and Murphy, was not the same Michel they had known for one hectic day two years and five months ago. He walked with a light foot, seeming never to touch the ground enough to leave a print, and his eyes were hooded like the eyes of an eagle.

He stepped to the centre of the room and stood in the middle of the silent assembly, his face without expression and darker than they remembered it. Enoch and Murphy, their eyes hating, became shadows among the shadows at the back of the room.

Guiscard was the first to break the crackling silence.

"Where have you been, Michel?" he demanded.

"My father was a very remarkable man," Michel replied, obliquely. There was a smile on his lips, as though at some secret joke. "How he knew that I would need the money he left me in the seventeenth century—I, and no one else—in 1954 or very shortly after, and at no other time, I do not even wish to speculate

"Had Roger Prentiss still been a member of your organisation, Guiscard you would have found that a steady trickle of cheques has been drawn on my account at the branch where he was a clerk. I have been—out of the way."

"But *why*?" expostulated Guiscard, impatiently.

"Because I so chose. Good evening to you, Irene." He nodded to her as if he had only just noticed her presence, smouldering like an angry flame at the side of the room.

"I learned many things while I was imprisoned by these men whom you call the opposition. Among others——

"But let me recount a few facts that alone should have pointed you to something vital which you've missed.

"Take, for instance, that I was, and am, the only member of Guiscard's organisation who could not be baffled out by Irene—chief focus of what he calls the opposition. Doesn't that mean something?

"Take the fact that I brought here three hostile immortals, who would never have ventured within a thousand yards of this place if they had had the choice.

"Take—this."

The hood seemed to leave his eyes, and he gazed piercingly around the room. In a flash—a flicker—the baffles that so jealously guarded the mental integrity of the two opposing parties were down.

No—not down. Penetrated. In one single place. By one single mind. By Michel.

And it was not that they knew each others' thoughts. It was that Michel knew both of them, and incidentally, they were mutually aware.

Irene saw it first, in blind speechless horror. She choked on the knowledge, pointing a quivering, accusing finger at the man who negated the ideals and beliefs of more than a lifetime. But it was Clairmont who put it into words.

"Your—*superconsciousness*?"

"How else could you be a part of me and I not be a part of you?"

Marcia breathed out gustily, and from her mind came a silent, unverbaised prayer of thankfulness. "Thank heaven he's on our side!"

"No!"

The mental and audible denial was like an explosion.

"No! I am not on your side."

"But——" That was Guiscard and Savigny, simultaneously.

"No. You've always thought in terms of the complete rout and destruction of the

opposition—of the mortido. It is in my power, true, to destroy them. But——

“Enoch, you once said that the libido is blind, unthinking multiplication. It is wars, pestilence, too many people and too little food. It is slums and overcrowding and plague. That is true. It is also true that the mortido is oblivion and despair, negation, dementia præcox on a racial scale. Think, all of you. Think how a sane individual is constituted—with the two drives so balanced that the mortido always checks the desire of the libido for unhindered selfish advancement. No, it is not for me to do away with the mortido. I am—how shall I put it—I am only the first *cell* to achieve the beginnings of that which is to ordinary intelligence as men’s consciousness is to the blind existence of an amœba.

“Eventually, there will be many cells like me, welded

into something which is so far beyond your comprehension that I shall not even attempt to explain that tiny fraction of it which is I. Till that time—well. Your squabbles and fights are the birth-pangs of a new creation. So you must continue as if I had never been. Therefore, you will forget me when I go away. What can the pre-conscious know of the conscious? By definition it cannot *know* at all.

“And I—who am also you, and also an infinitesimally small part of that which is to come—have things to do which you would not understand.”

He—they—in whom were truly met the hopes and fears of all the years, took five quick steps and passed out through the door.

And who, seeing him on the frost-touched December streets, would have taken him for anyone more than a man like other men?

Possible Life Forms on other Planets

by H. J. Campbell

Terrestrial organisms fall into two broad classes on the basis of energy relations—energy fixers and energy dissipators. All organisms need energy in order to do those things by which we recognise their possession of life—growth, reproduction and so on. Some organisms—the energy fixers—obtain their vital energy from extraterrestrial sources; in the main, these are photosynthetic plants. Other organisms—the energy dissipators—obtain their vital energy from terrestrial sources; in the main, these are animals and non-photosynthetic plants.

Of course, energy fixers also dissipate energy, but in far smaller amount than they fix it. The American botanist, Loomis, estimates that only fifteen per cent. of the material formed in a plant by photosynthesis is used up in the plant's respiration—so 85 per cent. of it is available for dissipation by you and me.

And there is a kind of dynamic equilibrium in operation. This ensures that the quantity of energy fixed over a reasonably lengthy period is equal to the energy dissipated

in that time, thus preventing a plethora or dearth of organic material.

If Einstein is right in claiming that material laws are the same for all observers, and he does seem to be, then whatever chemical form life takes on other planets, it will have to comply with these energy relation laws. This enables us to assign a number of general features to life on other planets.

Ignore for a moment the origin of life. Assume that it is there, on an alien planet. It may take the form of energy dissipator, energy fixer, or both. Which will it be? We can see at once that it cannot be solely of the energy dissipator type, for such organisms need ready-made compounds as a substrate for their dissipative activities.

Suppose that this alien life form is solely of the energy fixer type, that is, that they approximate to our green plants. They will build up energy, stored in the chemical bonds of photosynthesized compounds. They will reproduce and multiply. They will die. But they will not decay. If these processes continue for a

long time without the appearance of energy dissipators, they will be brought to a stop by lack of the material bases of energy fixation; the elements used in the formation of the, so to speak, capacitor substances will all have been utilised—will all be locked up in the complex synthesized compounds that are useless for green plant metabolism.

If life is not to become extinct on this imaginary planet, then energy dissipators, organisms similar to our animals, must appear. These will break down the fixed compounds and return the basic elements to the soil and atmosphere.

Thus we can predict that whatever chemical form this alien life assumes, it will be divided into kingdoms roughly equivalent to our plant and animal kingdoms, and will be involved in a material cycle whereby elementary matter is kept constantly available and energy is constantly dissipated.

It may be important here to notice the connection with entropy. On Earth, the extra-terrestrial source of energy is the Sun—its radiations are, as it were, trapped by the energy fixing plants and laid down as the forces holding atoms and molecules in juxtaposition. Animals come along and dissi-

pate that energy by breaking down the molecules and releasing the forces' heat. While the amount of energy fixed on Earth may balance the amount of energy dissipated on Earth, there is no such balance as far as we know on the Sun. Its energy is being continuously converted to heat—molecular motion—by our living system.

From what has been said, we can see that a similar positive entropy vector will occur on our unknown planet—and indeed wherever life exists. In other words, living systems are converting the stuff that stars are made of—radiations—into the stuff that space is made of—vibrating matter. This is part of the process people refer to when they speak of the universe "running down." It is the physical basis for the very ancient philosophical idea that there can be no life without death; that death is, in fact if not in fancy, an integral constituent of the system that includes the phenomenon of life.

We have now covered, in brief outline of course, possible forms of life as we know it, possible forms of life as we do not know it, and some of the general features of universal life. In all this we have tried to avoid the sensational; we have tried not to deal with form in

its artistic or anatomical sense, thus avoiding descriptions of awesome creatures known to fandom as bug-eyed monsters, or BEMs. And now, in passing to the origin of life, we hope to maintain this somewhat detached scientific approach, even if it means sacrificing a little entertainment.

The origin of life on Earth is a topic that has been discussed, quite hotly at times, ever since man realised that there must be an origin. Two main theories emerge from the very few scientifically tenable ones. These are known by the names panspermia and spontaneous generation. For our purposes one of these—panspermia—reduces to an extension of the other. We are not so much concerned with how life arose on Earth, as with how it might arise anywhere in the universe.

The theory known by the name of panspermia was put forward by the Swedish physicist Arrhenius, and claims that life came to Earth in the form of something like bacterial spores pushed through space by the light pressure of the Sun's rays. This is quite possible, though the invading micro-organisms would have to have been much more primitive than bacteria, which are some way from the bottom of the

evolutionary scale. The Sun's light exerts a pressure of two pounds per square mile on Earth's surface, and mathematics show that the light pressure is sufficient to act in a counter-gravity manner on small particles.

So life on Earth may have originated from something that came from space. Life on other planets may originate in a similar manner. But these things from outer space had to originate themselves, somewhere, sometime. *That* origin is the one to which the theory of spontaneous generation applies.

As applied to Earth—and life in the universe *may* have begun on this planet—the theory claims, quite simply, that since life exists here it must have an origin, and that it must have originated from inorganic—that is, nonliving—matter. This seems irrefutable.

But Pasteur's fame and the antiseptics that Lister gave to medicine are based on the observed *fact* that if you remove all living things from any medium and protect it from their entrance, no living thing will appear in it. When science came up against this apparent impasse between theoretical necessity and experimental fact, it was rather at a loss. A number of religious arguments

were advanced, defeated and advanced again. The only scientific argument put forward was one that took refuge in time-scales; it was suggested that the sterilized medium was not left long enough, *could not* be left long enough for life to be spontaneously generated. It was a suggestion that could not be proved, and the sense of being at a loss continued.

It is still present today, though experiment has to some extent come out on the side of spontaneous generation. Experiments have shown that if a solution containing water, carbon dioxide and ammonia is subjected, for lengthy periods, to intense ultraviolet radiation, reactions occur, energy is absorbed and there is a synthesis of simple sugars and compounds that closely resemble simple aminoacids—basic units of protein construction.

In our imaginations, we can picture the young Earth on which there are lakes and seas containing the basic constituents—water, carbon dioxide and ammonia. At that stage of its existence, the Earth had no ozone layer in the atmosphere to screen off most of the Sun's ultraviolet radiation as it does today. So the lakes and seas were bombarded incessantly by these high-energy radiations

and gradually turned into rather sickly and no doubt evil-smelling soups of sugars and protein units. Combinations and recombinations occurred until, in one place or many, a molecule appeared that was catalytically self-reproductive. This was the first living thing and all others developed from it.

Came the time when spore-forming organisms appeared. Some of the spores were carried high by the winds and tossed into regions of low gravitational force. They rode the light pressure of the Sun and were gently shoved off into space, later to be trapped in the gravitational field of another planet, there to give rise to life—panspermy.

Thus can be equated into a common system the idea of spontaneous generation and of mutational evolution.

The possible life forms we have discussed could have originated in this manner, making the necessary changes in the basic constituents. In all this, we should perhaps emphasize, there is nothing that cannot be reconciled with most basic religious doctrines. Science does not necessarily negate religious principles; often it confirms them.

End of this Series.

Errand of Mercy

by

William F. Temple

**Unlike the men of
Earth, they did not
come to kill**

The silvered dumb-bell hung high above the cloudy-white curve of Venus. Both were motionless—relatively. The planet was spinning on its axis at thrice the highest rate guessed at by pre-space astronomers. The atomic spaceship, in a fast equatorial orbit, matched its revolutions, and so remained poised above the same spot.

A slot opened in the long, slim connecting rod of the dumb-bell. On the thrust of invisible springs, a minnow ship drifted out sidelong. It was conventionally cigar-shaped. When it was half a

mile from the parent ship, flame suddenly jetted from its finned tail. As that tail was pointed in the direction of the orbital motion, the minnow lost speed, began to drop towards the distant clouds.

It dwindled, was lost to ordinary view.

But up in the radar cabin in the forward ball of the atomic ship, they were keeping track of it on more than one screen. The largest screen of all framed a radar reflection—piercing the obliterating clouds—of hundreds of square miles of the planetary surface beneath.

For a long time they had surveyed the planet. "Water, water everywhere," had become a chant between the operators. It was a watery liquid, anyway, and after they'd recorded 100,000,000

square miles of it, the first coastline drifted onto the radar screen. They followed a thousand miles of that, and then found it was actually a river bank.

It was a river which made the Amazon look like a trickle, and it came from mountains which dwarfed the Himalayas. Venus, apparently, went in for only a few features—but all in a big way.

Only one thing was certain about the nature of the ground—it was pretty rough. But way up the river, among the mountains, was an isolated plateau. That was the goal of the minnow. And it nearly missed it.

On the screen the error hardly showed at all. The bright dot which was the minnow, drifted momentarily over the river itself, wavered, then started back and became motionless on the verge.

"A nice landing," commented the skipper. Which shows that, at a distance of a few hundred miles, near-

disaster looks nothing very important. He pressed his mike button. "Hello, Raikes—everybody happy?"

No answer. He couldn't even hear the carrier wave of the minnow's radio.

The radio op. said: "Better give 'em a few minutes to settle, sir."

The skipper gave them ten minutes. Then again he inquired whether the three men in the minnow were happy. If they were, they either disdained to answer—or couldn't answer.

Actually, they stopped being happy when the minnow, caught by the strong prevailing wind, caused by the planet's rapid rotation, was carried several hundred yards off course. It had been trying to settle tail-first on the plateau. But on their screen the minnow's crew saw the plateau seeming to slide sideways beneath them. Then they had a brief, horrifying view of the river boiling under their jets.

Raikes got out of it, somehow. He crammed on full power. The minnow slowed, stopped, rose again, with steam swirling around the tail fins. The fuel tank indicator needle moved visibly—back. He cut the main jets, let one side-jet give an abrupt stab. On its thrust the minnow arced to the bank, its thin, jointed shock-absorber legs scrabbling for a foothold as though it were a falling spider.

The legs only partly absorbed the shock. It was a smacker. Each of the crew felt they'd fallen off a house. The leg nearest the river had stamped its pancake-like foot into the earth a mere yard from the verge. Here the bank was steep, a miniature cliff—the river rushed by a dozen feet below.

"Sorry," said Raikes. A black bruise was appearing on his chin.

"Think nothing of it," said Hacking. "I don't. Neither does Lewes here."

Lewes certainly thought

nothing of it, nor of anything else. He was out. His skull had rebounded from the cabin ceiling. The ceiling was of steel. He came round just in time to hear the skipper inquiring, for the second time, if he were happy. Hacking was bathing his head for him. Raikes was still trying to fix the sending part of the radio.

"Confound it," said Raikes. "We seem to have spares for everything except *that* valve."

"What about Jenny's set?" asked Hacking.

"Wrong type valves," answered Raikes, shortly.

"I mean, won't it get through on its own?"

"Doubt it," said Raikes. "It only transmits on long waves. We know there's a kind of double Heaviside layer up there. Ten thousand doubloons to a fag it won't penetrate."

"I'll take you."

"Okay." Raikes took a small battery radio from its compartment, tuned it to the auxiliary long-wave fre-

quency, and tried calling persistently, with both mike and key. The silence, as they waited for a response, was broken only by their breathing.

Presently, Hacking said: "You win," and tossed a cigarette to Raikes, who lit it and switched off the small set.

"Never mind," said Hacking. "It'll keep. At least they can see we're not in the drink."

"We were, as near as dammit," said Raikes, puffing smoke. He ignored the skipper's plaintive voice from the other set, and went to look at Venus for the first time from ground level. Despite the lowering clouds, it was quite bright outside, for they were twenty-six million miles nearer to the sun. The river was so wide that it looked like the sea—the opposite bank was over the horizon. But the waves were running transversely, and were whipped into white caps by the wind.

The bare, earthy plateau stretched away on the other

side. Behind the ship the mountains climbed into the clouds. Below, an unbroken forest crowded the river along its tumultuous, downhill course—perhaps all the way to its immensely distant mouth.

Raikes couldn't see the forest clearly enough through the small port holes. So he sent the telescopic TV camera on its tripod, up through the flap near the ship's nose, and took a look at the screen. Hacking joined him, as Lewes stood up rather dizzily and said he felt all right now—he didn't look it.

It wasn't a forest of trees, but of great fronded plants over two hundred feet tall. Venus was consistent in its liking for size.

Raikes swung the camera riverwards.

"What the devil's that?" asked Hacking. A whale-sized thing was leaping and twisting about in the river like a dolphin.

Raikes said: "I don't know, but it seems to be full of *joie de vivre*."

He was quite wrong. The great black fish wasn't jumping for joy, and it was near dead. Even as they watched, a last convulsive leap stranded it across a rocky spit. It struggled weakly for a while, then suddenly rolled on its side and lay still. The one visible fin, on the near side, hung down like a dead leaf.

Raikes focused on the monster, brought it out in clear detail. Ugly, shrivelled patches spoilt the sleekness of its skin.

"Seems to have been in a fight," said Hacking.

"It was immediately beneath our jets when we looked like going for a burton," said Raikes. "Didn't you see it? Those patches are burns."

Lewes tottered across and looked at it blearily, holding his head. "Poor beastie!" he muttered. "Poor beastie!"

Raikes stubbed out his cigarette. "Not our fault," he said, and forgot it immediately. On Earth he had tickled trout a thousand times,

betrayed them into slow death, and without remorse. Fish were only fish.

He put out the sample jar, on its arm, for atmospheric analysis. The atmosphere turned out to be an unlikely mixture of a number of things. Oxygen was in it—and the mystery of its imprisonment under the higher layers of the heavier carbon dioxide remained a mystery. So was ammonia, and it was a safe guess that the river contained plenty of ammonium hydroxide, whatever else. Fish oughtn't to live in it, but this was Venus, and the chemistry of life would have to be studied afresh.

As was to be expected under the heat-retaining blanket of carbon dioxide, the atmosphere was tropically hot and humid. So much for the dust-bowl pictures the astronomers—even the post-space astronomers—had painted. Theories changed like fashions in dress, and often first thoughts proved to be the truest.

The cooled suiting and partial face-masks, with goggles and purifying filters, were in order. They dressed themselves accordingly, and stepped out on Venus.

It was all right to speak if you did so in short snatches, not inhaling, lifting the filter momentarily, then letting it snap back.

There wasn't much more to see than the TV camera had shown them. The grey river washed hurriedly past the carcase of the huge fish. They could see one of its eyes, small as a sperm whale's, open, glassily fixed. The wind pushed at them relentlessly, always from the same direction, seeking to flatten them. They could see now that the great plant-forest had turned its back to it, and was bowing away from them, towards the east. But the fronds did not move, for the wind was constant, and they had adjusted themselves to its force.

They explored a fair portion of the plateau, but were poorly rewarded. The earth

seemed very similar to terrestrial loam. The plant-life was lush, but limited in variety. There were white worms, but only one observable species of insect life—a sort of red ant, of which Lewes bottled a few score, tenderly.

Soon Raikes called a halt. "Nothing for the headlines here. Let's sample the river. That's where the real life seems to be."

They returned to the steep bank. All appeared exactly as before, until Hacking pointed suddenly across the grey-white waves. They followed his indication. Somewhere near the cloudy horizon six or seven black humps moved slowly back and forth.

"Relatives of our friend here," Hacking guessed. "Perhaps they're looking for him."

Raikes snorted. "Not they. All fish are interested in is food."

"What do they feed on, I wonder?" speculated Lewes.

Raikes wasn't one to speculate. He disappeared into the ship, and returned with

a bucket on a length of rope. He lowered it into the river and brought it up, brimming. Then he carried it off for examination.

Hacking took another look round, and said: "This is a pretty dull area. I'm going for a spin in Jenny. Help me fix her up."

Lewes nodded. Together they unloaded Jenny from the ship and began to assemble her. She was a cunning creature of collapsible parts. Only the engine was in one piece.

Jenny was very nearly in her final form as a flimsy, but effective, helicopter when Raikes came out, nodded at her approvingly, and then said: "Much as we thought. NH_4OH plus free oxygen—somehow—and a sprinkling of animalculæ. If that's all they have to live on, those big fish are ruddy Spartans."

He gave a hand to complete Jenny, then went back into the ship to net onto the helicopter's comparatively short-range radio. He re-

turned to report: "Can hear you perfectly. Pity we can't answer. Never mind—you'll be able to send us a running commentary. You won't get over the mountains that way. I suggest you go down-river a couple of hundred miles. Plenty of daylight left yet."

"Right" said Hacking. He inserted his slim frame carefully into the machine. He switched on, and the vanes overhead began to revolve.

Lewes pulled out the tethering pegs which had held the helicopter firm against the gale.

"Good luck!" he shouted.

"What is to be, will be," replied Hacking, indistinctly but piously, through the window. Jenny soared up and carried him off on the wind's wings. They watched her become a speck against the sky. Then Raikes dropped his gaze to the river. He scrutinised the far-off monsters.

"I think they're just a little nearer," he said. "They'll bear watching. I'll keep an eye on 'em—you keep in

touch with Hacking. Give me a bellow if he sights anything out of the ordinary."

Lewes flipped a sketchy salute, which was easier than speaking. He went back to the ship and settled himself by the radio. It was tuned to the long waves now, and if the skipper were still trying to talk to them, he had no audience but his radio op.

Hacking's comments came through at intervals.

"Twenty miles off, and still much of a muchness. River and forest, forest and river."

A snatch of song: "Old Father Thames keeps rolling along . . ."

"Can't see any black beasties in these parts. The other side of the river looks like this side of the river . . ."

"Seventy miles, I trow, and not a living creature have I seen. Life on the Mississippi—ha, ha! Come to peaceful Venus for the perfect holiday . . ."

"This is just a long streak of boredom . . ."

"A hundred miles, and now I can't see the other bank."

Raikes came in, grunting, and raised an interrogative eyebrow.

"Still in touch, but no news," Lewes told him. "Seems to be a pretty lifeless sort of planet."

Raikes grunted again. "Maybe. Our piscatorial friends yonder seem to do little but go round in circles. But the circles are widening. Each time round they come a little nearer. Maybe I'm crazy, but I get the feeling they know we're here, they're interested in us, but don't want to show it—yet."

"Do you think they might . . . be dangerous?"

Raikes snorted. "Fish? Big as they are, what can they do? They can't come out of the water. They've got fins, but not wings. And if they're like the one lying over there, they haven't got any legs, either. A pair of fins, a pair of beady eyes, a tail, and a lot of blubber. Nothing more."

Hacking carolled from the

set: "Even the weariest river winds somewhere safe to sea . . . If I hadn't seen that this one did, from up aloft, I'd never have believed it. What are you two doing back there? Emptying the third bottle, I'll bet. Save some for me."

Raikes grinned appreciatively. "He's a lad, that one. Wish I could get back at him. Oh, well, I'm back to my sentry go. When Hacking returns, we'll pack up here—go back aloft and report." He rubbed his bruised chin gently. "Tell you something, Lewes. I'm not too happy about the take off. We may only just make it. We used a helluva lot of fuel on that braking gambit and we hadn't many drops to donate to charity. Still, I think it'll be okay."

He went out.

Presently: "Down in the forest something stirred," said Hacking. "I'm going a bit lower for a good look . . . No, it's not moving . . . Gosh!"

"What is it?" asked Lewes,

forgetting, under tension, that he couldn't be heard.

He had to wait several minutes to learn. "It's the complete skeleton of a monster—a sea monster, I'd say—lying in the plant-trees. Not so much *in* them, as *on* them. It's taller than they are—must be nearly four hundred feet high. And the length . . .! It's flattened the forest for a quarter of a mile. Looks like the bones of a really gigantic whale—makes the ones we saw look like tiddlers. It's been picked clean. Guess the worms or the ants—or both—had a real square meal. It's quite near the bank. Seems to me it either crawled or jumped out of the river. What a size, though! St. Paul's Cathedral would tuck just nicely inside those ribs. I'm leaving it now, continuing along the river."

Later: "Twenty miles further on—and here's another skellington. Just like the other. I'm beginning to wonder about these things. They

may be extinct monsters, but it's unlikely. Obviously the plant-trees were here first, and they can't be all that old. My guess is that there are still as good fish in the sea as ever came out of it. Whoppers! You'd need a battleship to go whaling on Venus. I'm carrying on. Done about 170 miles now."

The rocket ship lurched suddenly, and then was still again. But now it canted slightly towards the river. The mystified Lewes left the radio, and walked down the gentle incline of the cabin floor to look through a port hole. A couple of hundred yards out, as stationary as rocks in the swift river, were ranged in an arc the seven whale-like monsters they'd seen. Only their snouts and eyes were showing above the waves—and they were all facing the ship. It was as though they were poised for a concerted charge. Lewes felt suddenly a little weak.

Raikes came in, blunderingly, in haste.

"Better get out of here," he snapped. "At this rate the ship will be in the river inside ten minutes."

"What's happening?"

"The river bank is beginning to crumble just at this spot. Guess the weight of the ship is too much for this soft earth."

He was lifting the atomic rifle from its chest. He inspected it, grunted, and said to Raikes: "Give me a hand with this box of shells. Seems to me those brutes are just waiting for us to fall into the river so that they can have lunch. By heaven, I'll have *them* for lunch!"

Lewes helped him carry the heavy box of lead cartridges out into the wind.

"Don't walk over the edge," Raikes warned him. "It's nearer now."

It certainly was. Lewes was shocked. The foot of the landing leg which had been a yard from the brink, now dangled in space. A whole mass of earth had

fallen away into the river, and the new brink was perilously near another leg, whose foot was already beginning to sink.

He noticed the bank was still crumbling. For a moment he forgot the watching beasts, for it was crumbling in such an odd way. It didn't break away in lumps and clods, as one would expect such moist earth to do. Instead, all the newly exposed surface was falling away in an evenly distributed rain of fine particles, as though it were a dry sandbank. He wondered at the queer lack of cohesion in the stuff, and remarked on it to Raikes.

Raikes said: "It's been that way all the time. I've been trying to check it, banging it flat with a shovel. No use. The bank's undermined in some way, I should think."

He slid a cartridge into the rifle. "*Now!*" he said, and looked almost happy. He sighted carefully. The seven black snouts were perfect targets. Nicely spaced, they

kept their positions to a hair.

Unlike Raikes, Lewes wasn't at all happy about it. The scarred carcase, lying like an enormous black slug on the spit between grey sky and grey river, was a silent reproach. He didn't think its fellows were watching them with any intent of revenge—merely with the unthinking curiosity which even the lowest creatures feel about intruders.

Lewes hated to kill. On the other hand, he suspected his squeamishness might be no more than an infantile sentimentality, a projection of his own sensitivity into near-insensitive creatures—as a child endows a doll with imagined life.

But—when dolls are burned, they don't leap and twist in agony . . .

Because of this inner conflict, because he was scared to be thought soft or weak, he made no attempt to stop Raikes.

Crash! went the gun. A

stab of unbearably brilliant light obliterated the central monster. A steaming fountain shot up for a hundred feet. In the smother of its subsidence a great headless body appeared. Bobbing and wallowing, it was borne away by the current.

The six survivors were already carving spreading washes as they drove back towards the horizon.

"They sure can move when they choose," said Raikes. "I guess they won't come back in anything like that hurry." He ejected the empty cartridge case. "One-shot Joe," he said, with satisfaction. "And I thought I was going to have a battle on my hands. How's Hacking faring? We'd better go back and listen—maybe we're missing something."

"Just a moment. Look—the bank's stopped crumbling."

Raikes inspected it. "So it has. Well, there's a coincidence."

"Is it a coincidence? Odd

that it stopped the moment *they* went."

Raikes looked at him sharply, then stared after the retreating river beasts.

"How the devil could there be any connection?" he asked. "They never came nearer than two hundred yards."

"I don't know. But I have a feeling there is one."

"We'll think about it later. Come on."

They returned to the ship.

Hacking was chattering away to the empty cabin. "... cruising at seventy per, but he's overhauling me. What a spectacle, ladies and gentlemen! Far, far bigger than the biggest ocean liner you ever saw. The bow wave from his ugly snout is as high as a house. He must be hitting a hundred miles an hour—up-river, too, against this current! On his lonesome, so far as I can see, but he's big enough, at that, to lick an army—single-finned.

"He's passing just below me now. Great, shining,

black back. I could harpoon him—if I had a harpoon. But he wouldn't even feel it. I'm stepping on the gas—I think Jenny can whack up a bit more than Moby Dick here can, even against the wind . . .

"Yes. Will you move a little faster? We're treading on your tail . . . Ah, the winnah! Good old Jenny! At this rate we'll be back in time for tea—Little Willie too. Put the kettle on, you at home. You'd better get out one of the big cups for Willie here. I'm going down to ask him if he uses sugar . . ."

Hacking went quiet.

"What the hell's all this?" exploded Raikes.

Rapidly, Lewes told him about the enormous skeletons Hacking had discovered. Obviously, since then Hacking had happened on a living specimen, heading up-river like a fury—in their direction.

"H'm, sounds like the father of all fish," commented Raikes.

"It *may* be the father of those," said Lewes, gesturing.

"Coming to larrup the bad boys for molesting his kids?" guffawed Raikes. "Still, he couldn't possibly know about that."

"I'm not so sure. The bel-
lowing of whales can be heard for enormous distances under water. Perhaps they yelled for help. Perhaps they didn't need to yell."

"What do you mean?"

"Telepathy."

"You believe in that clap-trap?"

"It's been scientifically established."

"Ha! So had the rotation of Venus. Right to the second. And when we get here we find the know-alls were only two *days* out!"

Hacking's voice sounded again. "I've been buzzing Willie, and I don't think he likes it. He's got a wicked gleam in his little button eyes. He's looking up at me as though he'd like to murder me. No, he doesn't like

sugar. So all the more for us . . . Hullo, Jenny's going back on me now. What the hell . . . ?"

There was a tense silence. Both men stood rigid, an ear cocked towards the loud-speaker.

Presently: "It isn't Jenny. I absolve her. She's throbbing her heart out, trying to pull me out of this. It isn't the wind, either. We're being pulled *down*—towards Willie. He's watching us. I don't get it. He must have an electro-magnet tucked under his fin . . . It's no use. Jenny can't do a thing about it."

The jaunty tone was fading. A certain tremulousness was creeping into Hacking's voice.

"Wish I could swim. Wish I had my water wings—though they wouldn't be much use in this mill-race. Heads I become whale food. Tails I drown . . . Tails it is. To die must be an awf'ly big adventure . . . Here goes. I'm stepping off. 'Bye, you fellows."

Then, in a firmer voice: "What is to be, will be—like I said."

There followed nothing but the faint wash of the carrier wave—Hacking must have left his mike switched on. For ten seconds it sounded—then ceased abruptly. Jenny had crashed.

Raikes said, presently: "He was a real good lad. Guts! He was made of the stuff." He was very moved.

Lewes was upset, too. He had liked and admired Hacking. But never had he admired him so much as now. He knew he couldn't have kept his chin high to the last moment, as Hacking had. But then, Hacking really had been a fatalist. Lewes wasn't. He clutched at a straw. "Do you think he might be washed ashore, after all?"

Raikes said: "Maybe—as a corpse. Wouldn't matter if he were a Channel swimmer—that river's poison. It would kill anyone, and damn quickly. The poor guy didn't suffer long."

The ship lurched again. Raikes swore. "They're back again!"

He snatched up the rifle and ran out. With a queer sick feeling, Lewes followed him. The steady rain of particles from the bank had begun again, and the second foot had slipped over the infinitely slowly moving edge. The inroad was spreading towards a third foot, and Lewes saw at a glance that when that was left unsupported, the ship would tilt off balance altogether and crash straight into the river.

Raikes, gun ready, was staring searchingly at the river. Not a single black snout was visible.

"They're there," he said, quietly. "I glimpsed a couple of 'em as I came from the air lock. They're hiding just under the surface. We can't see them, but maybe they can see us."

"Look," said Lewes, urgently, "there's no sense in hanging around now Hacking

isn't coming back. We'd better take off before——"

"Take off?" snapped Raikes, rounding on him. "How the hell can we take off with the ship canted at that cockeyed angle? We'd drop straight in the drink—I'm telling you."

Raikes was a first-rate pilot. He knew what he was talking about, and Lewes realised that.

"There's only one chance," said Raikes, through his teeth. "We've got to stop the rot, or we'll lose the ship altogether. Seems to me we can only do it by killing those brutes—but quick. Afterwards, we'll have time to think. Perhaps we can shore up the ship some way."

"Afterwards?" repeated Lewes, slowly. "What about the thing that killed Hacking? It's heading this way at a hundred miles an hour—at least. Can't be long before it gets here. What do we do about *that*?"

"Pump it full of atomic

bullets," said Raikes. "Big as it is, it'll feel them, all right. Fetch another box—there's going to be a battle, after all."

"If we make for the other side of the plateau, it can't reach us," suggested Lewes, weakly.

"Get that box, Lewes," said Raikes, with dangerous quietness.

Lewes threw a quick, anxious look at the creeping verge. Softly, continuously, the dust-like particles tell. He did rapid mental arithmetic and decided the ship would stand for another fifteen minutes yet. He went for the box.

Inside the cabin, despite the menace from below, it seemed like a sanctuary. Here was the environment he'd lived in for weeks. It was familiar, friendly, safe. Not like—out there. He sought excuses to linger. The gleam of the TV screen caught his eye. Perhaps the telescopic camera could now discern the approaching monster.

Here was a real reason for delay—he might be able to help Raikes by warning him. He switched on, and focused the camera down-river.

There was the river, flowing on into the misty horizon and merging with it. He waited a full minute, watching. Then a black shape loomed hugely from the mist, grew rapidly. It was coming. It was near.

He ran. He shouted even before the air lock door opened.

"Raikes!"

But Raikes' attention was wholly engaged. He was reeling about on the river brink in a most unnatural way. He seemed to be having a life and death struggle with an invisible enemy. It was as though someone were trying to wrench the atomic rifle from his grasp, and he was hanging on to it like a terrier. Back and forth he teetered. With a desperate effort, he swung half round. He caught sight of Lewes.

"Help!" he shouted. "Come and help."

Lewes ran, in a kind of shrinking way, towards him. He was fearful of going—and equally fearful of not going. "If he fails," he thought, frantically, "then I'll be here alone!"

Just before he got there, the rifle seemed to be jerked by an unseen cord. It shot away over the brink, pulling Raikes, hopelessly off balance, after it.

There was a double splash. Lewes halted, staring with panic-wide eyes at the swift torrent. But Raikes didn't reappear. Then it became certain that he never would. Lewes was, indeed, alone amid inexplicable dangers.

As he stood there, frozen, one, two, three, four, five, six black snouts lifted slowly above the waves. Six pairs of beady eyes regarded him fixedly.

Then, from the distant mists to the right, a moving mountain, jet black, came like a thunderbolt. Everything became confusion, the confusion of a nightmare.

The river was lashed into a maelstrom. In it, huge black bodies whirled in a mad dance. The thrashing of fins became a sound of thunder, stunning the senses. Dominating it all, the leviathan, indistinctly seen, swiftly active.

Lewes turned his back on it all and ran, past the ship, on across the plateau where no living thing larger than worm or ant could touch him.

But was that true? As he ran, his heart pounding almost as fast as his feet, the noises of hell roaring about him, he remembered Hacking's description of the skeletons. Such monsters could leap onto the land, even if it cost them their lives.

If the one behind him leaped now!

The vision of his being crushed beneath that immense weight made him strain harder. He overtaxed himself. The filter wasn't allowing enough oxygen through for this effort. He began to reel as he ran, gasping. And as yet he'd not covered a

quarter of a mile, the very minimum margin of safety.

The ground seemed to be darkening beneath his feet. The darkness rose like a sudden tide, and engulfed him as he fell into it.

He couldn't have been unconscious from oxygen starvation for many minutes, but when he opened his eyes all was quiet. It was as though he were awakening from a long sleep. He felt weak and tired, and blinked stupidly at the grey sky—he was lying on his back in a hollow.

He was afraid to rise. If he lay still, he couldn't be seen from the river. Perhaps they'd all gone now—but he'd rest a while before checking on that.

So he continued to lie there. Thoughts began to move in his mind. At last he had a chance to deliberate.

The leaping of the fish had struck a memory chord—salmon. Salmon climbed and leaped their way up rivers to

spawn in the upper reaches, and then return to the sea. Most probably the smaller creatures were the leviathan's spawn, now partially grown, beginning to make their way down to the open sea.

Perhaps, telepathically, the leviathan had learned of the death of one or more of his offspring by the activities of these queer bipeds. It had rushed to the rescue.

But its offspring had been doing all right without its aid. They had finished Raikes. And the leviathan had finished Hacking.

There was a similarity between both men's deaths. They'd both been *drawn* into the river.

Come to think of it, it looked as though the bank had been drawn into the river also—piecemeal. The smaller titans had all been concentrating upon that portion of the bank. When they fled, leaving one of their number dead, the bank had ceased to fall apart. When

they returned, the insidious gnawing was resumed. Almost certainly they were responsible.

As none of the creatures directly contacted what it affected, there could be only one solution—psycho-kinesis. After long and exhaustive experiments, based on the early work by Dr. Rhine, both telepathy and psycho-kinesis—the “PK Effect”—had finally been accepted as facts by terrestrial science.

But only rare humans possessed these powers to any measurable extent. It had been confirmed that direct sight of the object to be moved, solely by mental power, increased the effect. Although the smaller whale-like creatures had this power to a far greater degree than any human, it was yet limited. It took the concentrated thought of all of them merely to keep pulling away thin layers of particles from the bank. They managed, in the end, to draw the rifle into the river, but if Raikes hadn't foolishly clung to it too long, and so

overbalanced, he could probably have withstood their influence on his person.

But the full-grown monster was quite another matter. Its PK power must be formidable. It had caught and tethered Jenny in full flight, dragged her down relentlessly.

Where was it now?

Lewes rolled on his stomach and peeped cautiously above the lip of the hollow. He could see to the horizon. The river flowed emptily. Even the burnt carcass was no longer there. The upheaval must have washed it from the rocky spit. But the rocket ship was still there, tilted crazily.

He waited ten minutes, then stood up, shakily. He waited again, peering in all directions. But nothing moved except the river and the wind.

Circumspectly, he made his way back to the ship and peeped inside with a mad hope that either Raikes or Hacking might have returned from the dead. This miracle was not granted. He was alone,

marooned on Venus, unable even to contact his kind. The minnow weighed ninety tons. He couldn't do a thing about straightening it up for take off.

What were they thinking up in the parent ship? It had carried only the one minnow—they couldn't come to his rescue. The big ship itself was not designed to land, nor even to penetrate atmosphere. It would crack up if it tried. Its habitat was space.

This first expedition on Venus would be written off, he with it. In perhaps a year or so the second expedition would arrive.

Meanwhile . . . ?

He stood on the little cliff, looking hopelessly at the river.

And then, half a mile out, an enormous black hull surfaced, the watery liquid streaming from its back. He tried to turn and run. But one invisible vice closed on his limbs, another on his mind. He could neither move nor think.

The leviathan rose steadily until it towered upon the surface, facing him.

How long he stood there he never knew. But at last the power of thought returned to him, and it was as though everything he had ever known about Earth and its flora and fauna was trying to flood back into his conscious mind, all at once. He felt his brain must burst.

Slowly, the mental tumult settled. His head ached dully. He stood before the monster as though before the Judgment Seat, and there was no need for excuses, no need to explain himself, his origin or his activities—all was already known. All information he could ever give had been sucked from him.

He awaited the verdict.

And it was not a verdict, but a plea.

Thoughts—thoughts not his—charged so powerfully with emotion that they seemed to rock the seat of his soul, possessed him.

"Kill me. Please kill me. Bring your kind and kill us. Hunt us, destroy us, save us from this unending torment. You can kill us; you have the power. We cry for quick death. We are weak—we cannot bear our fate."

When he had absorbed this shock, Lewes thought, haltingly: "Explain—tell me."

Again the torrent of emotion.

"In the deeps there are yet thousands of us left, and all diseased. There is no exception. The circle of contagion was completed long ago. The virus swarms in our blood and causes agony beyond endurance. There is no respite. We can cause matter to move, by mental power, if we can observe it. We cannot see the virus. If we could, we should cast it from us by wrenching out our own hearts. We are steeled to that. Every year we are forced to wrench out our hearts. I have just done so. I have just killed my own young."

The anguish which pulsed from the monster's mind was almost insupportable.

"That we should be so at the mercy of instinct! But ingrained racial habits run far deeper than reason, and reason is helpless against them. Each year the mad season comes. We are possessed. We climb the rivers to spawn in the shallows. Then we return to the sea. When the madness has passed, we have to undo what we have done, annihilate what we have created. It is a duty, an errand of mercy.

"We must spare our young what we suffer. For they are born with the disease in their blood. Yet not until they begin to mature does it mature also and start to grip and pain them. They are small and physically weak. We can kill them with a blow. But we cannot kill ourselves so quickly and easily. That we, too, could have died in infancy! Some of us are driven to crawl ashore to starve. But that brings death

only a little sooner, and with even more agony."

Lewes felt compassion. He framed the question in his mind: "There is no hope of cure?"

"None. Neither in our world nor in yours. I have searched your mind. In your memory is knowledge of all the elements and organic matter composing your world. It is less rich than ours is beneath our seas. No combination of them could affect this virus. No, there is no hope. Be merciful. Grant us surcease."

So he was not the judged—he had become the judge.

"You killed my friends, who did not wish to die."

"I did not intend to kill that man who was flying. He was in the machine and I did not realise he was not part of it. I had not seen man before. I brought the machine closer to examine it, and he jumped out and died in the river almost instantly. I am very sorry. As for the other man, his death also was

accidental. My young were trying to take the killing weapon from him. You must remember that he killed one of them, and all of you had killed another. That was a boon to me, but to them, in their ignorance . . . You understand?"

"Yes. I understand. But still I cannot help you. To take off, my ship needs to be vertical——"

Lewes didn't finish that thought, because his limbs suddenly became free, and in the same instant the minnow was lifted a dozen feet off the ground, all ninety tons of it, and set down carefully, twenty yards in from the edge of the bank.

There was no need to comment, no need to linger. He cast a parting glance at the great beast lying out in the river, still as a rock, despite its suffering, and strode across to the ship.

"You promise to return?" The mouthless voice spoke in his mind for the last time, pleadingly.

"I promise."

He entered the ship and fastened the air lock door behind him. Purposefully, he made the preparations for take off.

Then all was ready. He pressed the firing button. The ship leaped from the ground. For the next few seconds, all went according to the manual.

And then . . . He was nearly a mile up when he noted that the minnow had gained insufficient speed to reach the orbit of the parent ship. The fuel tank indicator showed a dangerously low figure.

Now he recalled the waste

of fuel through the bad landing. It was even worse than Raikes had thought.

He wasn't going to make it. He might reach a height of a hundred miles, but inevitably the ship would crash back on Venus.

There was one slim chance, and he tried it. He sent out a mental prayer. It was a very precise prayer, stating the exact impetus he needed.

The prayer was answered by a deed, and at once. A power which did not reside in the fuel tank seized the minnow, gave it the necessary acceleration, and sped it on its errand of mercy up through the clouds.

THE LEVER AND THE FULCRUM

Is the title of next month's lead story by Alan Barclay. Kenneth Bulmer gives us *First Down*. Other stories are *Vital and Urgent* by F. Lindsley, *Forever Today* by Len Shaw. We welcome back Frank Quattrocchi with a story called *Addict*. The usual features such as *The March of Science*, *Fanzines*, *Reviews*, etc., are also included.

AUTHENTIC—A Monthly Must!



(II) PLUTO

Mass, 0.1 of Earth's. Distance from Sun, 3,675 million miles. Year, 248.43 years. Day, unknown. Orbital velocity, 2.7 miles per hour (?). Escape velocity, 6.5 miles per hour (?). Gravity, 0.9 times Earth's (?). Diameter, 3,600 miles. Density, 5.3 (?). Albedo, 15% (?). Eccentricity, $17^{\circ} 08' 38''$.

Less is known about Pluto than about any other planet. So distant is it that it cannot be seen with telescopes smaller than twelve inch in aperture—and even the twelve inch shows Pluto as a point, not as a disc.

It was discovered in 1930 by the American astronomer Tombaugh, after he had examined two million star images for signs of the planet.

One of the most interesting things about Pluto is that although astronomers went looking for it to explain perturbations in Uranus' orbit, now that they have found it, Pluto seems too small to be able to shift Uranus. Thus, there is the possibility of another, tenth planet in the solar system, yet to be discovered!

Pluto's orbit is more eccentric than that of any other planet—at

perihelion it is 30 astronomical units (mean distance from Earth to Sun) from the Sun, and 50 astronomical units at aphelion. It's mean distance from the Sun is 39.5 astronomical units.

At this enormous distance from the Sun there can be no question of an atmosphere or of liquids. Pluto, the solar system's last known planet, is a bleak, cold sphere of jagged rock and frozen gases; dark, too, with the Sun a mere point in the black velvet of the sky. It has no moon to lessen the obscurity of its night.

And so we come to the end of this series of articles dealing with the solar system. We have looked at the Sun, at the planets and at their moons. And we have seen what a motley crew Sol's satellites are—ranging from the red hot acidity of Mercury, through the humid, sweltering clouds of Venus, past Earth and out to the far cold reaches where whirl the giant planets Saturn and Jupiter; and beyond, to the sentries of the system, Neptune and Pluto. We hope you liked the trip!

Pulling a fast one on the wife will be
no easier in the future

Stand-in

by JONATHAN BURKE

It was not until the middle of the evening that she began to have her suspicions. Walter had been so assiduously attentive that she had instinctively relaxed, soothed by his affectionate voice and his still-youthful smile. It was not until she yawned and suggested they should go to bed early that she sensed something was wrong. He looked ever so slightly disconcerted. Then he said, brightly: "It's a bit early yet."

She studied him for a moment. "Is there anything wrong, dear?"

"Not at all," he said.

"It would do us good to make an early night of it. We'll have a nice drink first."

She flicked the switch near her chair, and sat back in the comfortable anticipation of being presented with hot

chocolate from the service chute within five minutes.

Walter, rather too airily, said: "I don't really feel tired yet. I think I'll sit up a little bit longer." He paused, as though considering his own remark judicially, and then added: "But you run along, darling. As soon as we've had our drink, you run along."

She looked away, feeling more than ever uneasy. It just couldn't be—he would surely never have done such a thing . . .? It couldn't be. She wouldn't let herself believe it.

But once the idea was in her mind, she couldn't just pretend that it wasn't there. There was only one way of finding out.

Casually she got up and walked across the room. A

quick glance at the door of the wine cupboard showed that Walter's panel was locked. She opened the drawer to get the emergency key—and discovered that it was not there.

She drew a deep breath and turned to face the enquiring gaze of her husband.

She said: "Walter, I know what you are. You're not yourself."

"Really, darling . . ."

The reply was feeble and uncertain. It quite decided her. *They* could never grapple with a really awkward situation.

Walter was getting up. She glanced quickly round the room, and saw the old-fashioned poker that Walter insisted on having in the ornamental fireplace—for all his technical brilliance and belief in progress, Walter had a great longing for old traditions, and a rather naive affection for old-world charm in his home. She was glad of it now. She grabbed the poker, brushed past Walter, and drove the end of the

poker through the woodwork of the wine cupboard.

"No!" cried Walter.

She twisted the metal against the lock, and a moment later the door cracked open, showering jagged splinters and fragments onto the floor.

Then she reached in and cut off the control switch inside the shattered panel.

She turned round once more and said: "Well?"

There was no reply. She had known there would not be any. Walter stood in the middle of the room, staring in front of him, motionless. His mildly protesting expression had frozen on his features and made him look puzzled and absurd. He did not speak.

Barbara said a rude word, knowing that the lifeless figure before her would not hear it.

The delivery chute clicked a warning, and delivered two beautifully steaming cups of hot chocolate. Barbara sat down and drank both of them. Then she got up and walked round Walter to mix herself a cocktail—a fiery one.

She put the light out and sat in the darkness, waiting—waiting and fuming, stung by resentment.

How could he do this to her? How could he, how could he . . . ?

She had to wait for half an hour, though it seemed more like several hours. At last she heard cautious movements near the back door. She kept silent until footsteps approached the door of the room in which she was sitting, and then she said: "All right, you can come in."

There was a pause.

"Come along in," she said, angrily. "It's no good hanging about out there."

The door opened, and Walter came in. He switched on the light, and looked sheepishly at himself standing in the middle of the room.

Barbara said: "Aren't you going to say anything? Don't just goggle at me like a . . . a robot."

"I suppose it's hard for you to understand," he said, tentatively.

"Hard?" She exploded from her chair, almost launching herself at him as though she intended to knock him over. "It's certainly not easy to understand why a man should sneak off out without explaining to his wife where he's going, and leaving a robot to entertain her. I never thought you could do such a thing to me."

They were both standing close to the silent version of Walter. His presence irritated both of them at the same moment. Barbara said, ridiculously: "Oh, do go away." And her husband went to the cupboard and switched on.

His other self rocked slightly, then blinked and looked self-consciously at Walter.

"Good evening, sir. You're back early."

"I am not back early," said Walter, frostily. "I am back at the time I arranged—and what do I find? I find you asleep on the job."

"I fear that Mrs. Desmond must have switched me off."

"Well, just go and stow yourself away for the night," said Walter, vindictively, "and I'll switch you off again."

He watched the robot walk gracefully across the room and out into the hall. There was a gentle click as the door of the storage closet snapped shut. Walter switched off.

"Well?" said Barbara, quietly. She was still waiting. "I think you owe me an explanation."

"It was a matter of business, dear . . ."

"Funny business," said Barbara.

"Please don't be crude about it, darling. It was just that I had to go to this conference, and after what you'd said about us never having an evening at home together nowadays, I felt you wouldn't be too pleased."

"But the whole point of having those robots made," protested Barbara, "was to enable us to stay at home. It's *him*," she went on, with ungrammatical fervour, "who

ought to have gone to your precious conference. That's what he's for."

"But this was rather a special one. I needed to make decisions—important ones concerning future policy on robot construction for the Government. I simply had to be there. It wasn't just a routine matter that I could leave to Wally."

Barbara pouted. She was not going to be soothed. She said: "But even if it's true—and I'm not sure it is—even if it's true, how could you leave Wally with me like that? To leave a robot to entertain your wife . . . that's too much, Walter."

"I didn't want you to be upset."

"You didn't want me to be upset? Suppose you hadn't come home—suppose you'd left it with me all night, would it . . . that is, how far were you prepared for it to . . . er . . ."

"Barbara!" Walter was indignant. "Nothing like that could have happened. In any

case, there was no question of my not getting back. I had set it to nip out into the garden when I brought the gravicop down into the garage. When I got back and Wally didn't appear, I guessed something had gone wrong."

"I still don't see why you had to play such a trick on me. I don't see why you couldn't have sent Wally to the meeting."

He sighed. "I've told you. We had to make decisions about new developments. The Government's check on robot construction is hopelessly out of date, and we want to let some of the higher-ups know just what possibilities there are—we want a freer hand in design and so on."

"It'll spoil things if everyone has robots like ours."

"I don't mean to go that far. The authorities would have a fit if they knew we'd been able to produce humanoids like this. They still won't give permission for anything but the most obviously mechanical, box-like contriv-

ances. That's what we want to get cleared up. That's why I had to go to this meeting tonight and discuss future policy, and what weight we could bring to bear on the Government. And I knew you'd been counting on us having a nice quiet evening together, so . . ." He shrugged apologetically.

Barbara tried to continue with her resentful expression, but her original anger was fading.

She said: "Oh, all right. But don't think I'm not cross. And this had better be the last time."

"It will be, darling."

"Mind it is."

"Of course. It won't happen again."

She studied him reflectively. "It *is* the first time, this one, I suppose? You haven't ever done it before?"

"You'd have noticed," said Walter, glibly, "just as you noticed this time. I ought to have known I couldn't fool you with Wally."

"No, that's true," said

Barbara. "But—you're quite sure you haven't ever . . .?"

"Quite sure," lied Walter.

Walter loved his wife. There was no doubt about that. In his own way he loved her as devotedly as she loved him; but his way was not quite as demonstrative as hers. There were times when her intensity proved just a little bit overpowering—Walter found it hard to keep pace with her eager chatter; he knew that his inability to cope with her affectionate effusiveness often made it seem that he was cold and unresponsive. And that wasn't true. But it was true that he liked, now and then, to get away and have a breathing space. He found an evening meeting of his colleagues at the research centre a relaxation, rather than an arduous duty.

He was sorry that Barbara had detected Wally this time. The robot had served a similar purpose two or three times before, and Walter had

thought that all was now well. But even the most convincing humanoid developments—and Wally was one of the finest models they had ever created—could not be entirely reliable. He would have to be careful in future. Barbara could be quite exhausting when she really lost her temper, and Walter was all in favour of a quiet life. It was, in fact, his desire to make life less arduous that had resulted in the construction of Wally, and Wally's companion model, Babs.

The Robot Research Foundation, and its associated manufacturing and exploiting companies, had been brought into being by Walter's father. Working under Government supervision because of the alarm that was felt in certain quarters about the development of pseudo-intelligent beings, the Foundation had produced robots for every conceivable purpose. From the humblest of new labour-saving devices to the most complicated electronic brains,

R.R.F. had a virtual monopoly of the field. Smooth-running mechanical servants were provided. Robot traffic controllers were installed in all the major cities, and robots took over many police duties. No warehouse needed to employ a human watchman; no mono-rail express needed a driver; no restaurant required the services of more than two or three human beings to keep cooking and waiting up to the highest possible standard.

But there were stringent regulations. Strides in robot manufacture had been so enormous in twenty years that a great many people felt uneasy. Religious bodies in particular voiced energetic protests about the construction of humanoid beings—mechanical creatures so life-like that they could be mistaken for human beings. Laws were passed forbidding the construction of such highly advanced models. A machine was to be kept recognisably a machine. The grafting of skin and the introduction of

natural mobility were forbidden.

Wally and Babs were very special . . . and their existence was undoubtedly a breach of the law.

"Wouldn't it be wonderful," Barbara had once said to her husband, "if there could be two of each of us, so that when there was some boring party on, we could send our other selves along. And when you had some silly old meeting, you could let your Number Two trot along, while you stayed at home with me."

"Mm," was all that Walter had said; but the remark fermented in his mind, and before long a few of his most trusted workmen began to experiment with a new hush-hush design.

When they were finished, Wally and Babs looked perfect—as perfect, that is, as one would expect a normal human being to look. In deportment they were graceful, and their conversation was flawless. Their electronic

minds, stored with appropriate memories, and fed from time to time with such information as their owners thought they ought to possess, coped neatly and efficiently with any question that was put to them. From a basis of known facts and routine data they could extrapolate in a way that even Walter Desmond had to admire—their conversation was much smoother and far less grudging than his own tended to be. Indeed, there were times when he found himself looking with some affection at Babs. Babs was always more affable and less argumentative than Barbara. He could talk to Babs—in fact, he had once or twice caught himself talking the most utter nonsense to Babs, and receiving neatly phrased, unembarrassed replies, that eventually brought him to his senses.

They were a useful pair. No one would have suspected their essential unreality—no one, that is, who didn't know of their existence—and there

were very few people who did, and they could all be trusted to keep the secret.

It was a pity, thought Walter again, that his wife had guessed that she had been fobbed off with the substitute for an evening. Next time he must try to ensure that she couldn't get at the switch—it made him wince when he looked at the shattered horror of that beautiful cupboard door.

Next time . . .

As it happened, the next occasion on which he planned to go out with the boys for a pleasant evening gave him the chance of an interesting experiment.

"You haven't forgotten that Simon is coming in tonight, have you, darling?" said Barbara.

In point of fact he had completely forgotten, but he said: "No, of course not." Then he thought about it for a moment, and added: "Though I don't see why he keeps hanging around."

"Don't you, darling?"

That exaggerated archness of hers annoyed him intensely. It was so stupid. There was no question of his being jealous of Simon—after all, Simon hadn't married Barbara, and he himself had, and that was that. But it irritated him to see the silly idiot posturing and hovering around Barbara, saying meaning, ironical things that he thought Walter was too dense to understand. And although Barbara agreed that Simon was an utter fool, she did seem to get a kick out of that sort of pretentious nonsense.

He said: "It's time Simon grew up and found himself a wife."

"I'm afraid he has lost the only ideal woman in his life," said Barbara, smugly.

"Well, a fat lot of good it'll do him to brood over it," said Walter.

It was not until later in the day that he realised what an opportunity was being offered to him. He wanted to go out

and play a game of Martian slides with a few of the boys, and this time it would surely be safe to let Wally take over at home. Barbara was always too busy mopping up Simon's florid compliments and simpering at his jokes to pay much attention to her husband. Walter could have a couple of hours out and then return, work an unobtrusive switch with Wally, and take over in time to usher Simon out of the house and silently wish him good riddance.

There was hardly any risk to it at all. He slipped out that evening full of confidence.

And Wally strolled back into the room Walter had just left, accepted a drink from the cocktail mixer, and smiled placidly at Simon.

It was the placidity of that smile that eventually aroused Barbara's suspicions.

She had been listening to Simon for almost an hour, and thinking how very sweet he was. It was all very well for Walter to sneer and say

how damned silly and futile all that gush was—Walter was an undemonstrative type, and not much given to the paying of pretty compliments; but that didn't mean that there was anything wrong with the paying of compliments. Walter just didn't understand how a woman appreciated such things. A woman liked to be flattered and made a fuss of. She liked to be complimented delicately on her appearance; and how could you resist the yearning in the eyes of a man who obviously still loved you and longed for you?

There were even moments—she shivered at the disloyal thought, but it was rather a delicious shiver—when she wished she had married Simon instead of Walter.

No, perhaps that wasn't altogether true. But it would be nice to have a little affair with Simon. Nothing too serious, of course. As long as she still loved Walter, you couldn't say she was really being unfaithful. Not really.

She blushed and looked down at her hands, folded demurely in her lap.

Simon came and curled up at her feet. He was too adorable. He could do a thing like that without looking in the least self-conscious or awkward.

He murmured: "Come out with me tomorrow evening."

"Oh, I don't know . . . I mean . . ."

"Walter won't mind," said Simon in a louder voice. "After all, he doesn't appreciate you as he ought to. I've always said that you don't appreciate her, haven't I, Walter?"

"Yes," said Walter, placidly.

"And you don't mind if I go out with Simon for the evening?" asked Barbara, staring at him.

He smiled at her. "I shall be torn apart with jealousy," he said with a smooth gallantry that struck a chill to her heart, "but I know that right will triumph in the end. I shall be waiting for you

when you return, sobbing and disillusioned."

Even Simon looked mildly surprised. But he said: "I rejoice to hear it, old man."

Barbara looked away. She was afraid that her expression would betray her. At the first opportunity she stole a glance at the cupboard. It had been repaired on the broken side, and both panels were now locked.

And even if she could have got at it, she would not have dared to switch off with Simon here. If her suspicions were right and this was Wally in the room with them, she could not switch him off—she could not let the garrulous Simon into the secret.

Nevertheless, she felt an impulse to do so, to put an end to the whole thing, to show Walter up for the deceitful, wretched rogue he was. It was an impulse that she restrained.

But she would show him. Somehow or other, she would get her own back on him.

She went out into the hall.

The door of Wally's storage closet was locked. She opened the door of the compartment in which Babs stood, motionless, and studied her thoughtfully. Then she went back to join the men—or, rather, the man and the shadow—and said brightly to Simon:

"I really think it would be nice to come out with you, Simon."

And the false face of Walter smiled without the trace of a sneer.

When Walter himself returned, he changed places with Wally in the garden.

"Anything special I ought to know?" he asked.

"Mrs. Desmond has accepted an invitation to go out with Mr. Collings tomorrow evening," Wally reported.

"Has she? Good heavens, she must be potty."

Wally was too innately respectful to pass any judgement on this remark.

"All right," said Walter, as they approached the house.

"Wait until I'm well inside, and then stow yourself away. It may be ten minutes or so before I get an opportunity of switching you off, so don't start fidgeting about."

Then he strolled nonchalantly indoors and joined his wife and Simon.

"Another drink?" he said.

"Not for me, old boy. It's time I was running along."

Walter did not press Simon to stay. He waited until Barbara had finished fussing over him at the front door, and then, as she was plumping up the cushions and whisking about the room in her usual erratic way, he said: "I suppose you're serious about going out with Simon tomorrow?"

"Of course, darling. You don't mind?"

"I don't mind," he said. "I just can't imagine why you should want to spend an evening with that absurd bore. One evening of flattery ought to be enough for anyone."

She laughed. "Yes, I don't know that I really want

another dose of Simon's conversation. It's so meaningless, isn't it? If only it led to something——"

"To what?" said Walter, aggressively.

"Well, if there were any purpose in it . . . you know what I mean . . . but in the nature of things it can't lead up to anything, can it? After all, I'm married to you, and Simon's too late."

"I should think so. I can't understand why you should take such pleasure in leading him on."

Barbara said, abruptly: "Don't you want me to go, darling?"

"As we've had Simon's company all evening, I thought we might have a quiet time together tomorrow."

"How sweet of you, darling. Perhaps you're even a little bit jealous?"

"Jealous be damned," snorted Walter. "I know you've got too much sense to care twopence for anyone as thick-headed as Simon——"

"He's not all that thick-

headed. He says nice things to me."

"Oh, all that bosh . . ."

She looked at him with her candid, thoughtful grey eyes. Then she said, softly: "You're far too arrogant, Walter. But there's nothing I can do about that now, is there? If you order me to stay in tomorrow evening, I'll have to do as I'm told."

"Nonsense. If you want to go out with Simon, you go out."

"I could send Babs," she said, with the flicker of a smile.

The smile struck echoes. Walter began to laugh. It was really an awfully good idea. Simon would be far too dense to notice the difference—Simon would be delighted by the gentleness and politeness of the duplicate Barbara.

He said: "That's splendid. That's really wonderful. He'll never know. Even when he kisses her he won't notice the difference."

"What makes you suppose

I allow Simon to kiss me?"

"Oh, a friendly peck now and then . . . it doesn't mean anything. No need to be worried about it." Walter went on, chuckling. "Poor Simon!"

"Poor Simon," echoed Barbara.

The thought of the hoax kept on recurring to Walter during the course of the following evening. He had watched Barbara dressing Babs ready for the evening out, and when, just before Babs left, the two of them came into the room in a flurry of womanish excitement, Babs was so convincing and so very human that he gave her a drink with an instinctively courteous bow of appreciation.

"Old Simon's going to have a wonderful time," he observed when he and Barbara were alone together. "Damn it, he's a very lucky chap. Not everyone has such excellent substitutes provided."

"Simon is very lucky," Barbara agreed.

Barbara was very sweet and agreeable all evening. She was a little quieter than usual, as though perhaps regretting the trick she was playing on Simon. But when Walter made a joke about the situation and said, not for the first time, "Poor Simon," she smiled and echoed his words. He began to feel that he ought to give up his rather risky ventures away from home in the evenings. It was much more pleasant to sit here and talk to his wife, from time to time switching on the visio and watching the soothing colours and images on the far wall. Music throbbed gently through the room. He drowsed.

Barbara did nothing to disturb him. It was Walter himself who was the first to notice how late it was getting. He thrust himself up from his chair and said: "Where's Babs got to?"

Barbara shrugged. "She can't come to any harm."

"No, but . . . confound it all, it's two in the morning.

And Simon doesn't *know* that Babs is Babs. If he thinks he's out with you, he has no business to be out until this hour. It's a disgrace."

"Everything will be all right," said Barbara, placidly.

"You're taking it all very calmly. I mean, I should have thought you'd be insulted——"

"No," she said, "not insulted."

Although the room glowed with mellow light, the feeling of night had descended. Outside would be darkness. It was high time Babs was home. Walter felt rather like an indignant father waiting for an errant daughter. He was surprised that Barbara should be so unconcerned.

He reached a sudden decision. He said: "Give me the key for your cupboard."

"The key?"

"Yes. I'll switch off Babs. That'll give Simon a shock."

"But you can't do that. He'll raise an awful fuss. And then everyone will find out, and——"

"We'll give him a few minutes to get in a panic, then I'll call him on the visiscreen and tell him what's happened. He deserves a shock. Fancying his chances with my wife—or with what he thinks is my wife!"

Barbara shook her head, but seemed unable to speak.

"The key, darling," said Walter, impatiently.

She took it from her pocket and held it out reluctantly. He turned to the cupboard and opened the panel.

"The way you take it so calmly," he said, as he reached for the switch, "anyone would think you were Babs. Now, that would be funny—if you were Babs and I was Wally, and we were sitting here talking while all the time our real selves were out somewhere . . . You know, I've almost got myself won-

dering if I am the real one, after all."

He turned, laughing.

There was no reply. Barbara sat staring in front of her. She did not move, did not speak.

Walter said in a hushed, strained voice: "No. No."

He went over and touched her. She did not respond. The finger of the clock moved smoothly and remorselessly on.

"Oh, no," said Walter again.

He sat down heavily in the chair facing the immobile Babs. He sat there waiting, staring as though hypnotised at the calm, beautiful face before him—staring, and remembering the living face that this one imitated.

And at last, painfully, he began to understand the meaning of jealousy.

The MARCH OF SCIENCE



A piece of Swift's irony in *Gulliver*, the stupidity of which has not been generally recognised, pilloried scientists for spending their lives trying to extract sunbeams from cucumbers on the premise that what went in must be able to come out. Well, of course, scientists over the years have proved this reasoning to be correct, but Swift was sending his frustrated darts more at the triviality of the subject than at the method or approach. If he was alive today he might focus his illogical scorn on two researchers in the Department of Agricultural Chemistry in the University of Reading, for they have just published their third paper on the chemical and physical characteristics of egg shells of domestic hens.

To the unperceptive, C. Tyler and F. H. Geake may seem to have been wasting their lives on trivialities. But anyone who has read A. L. Romanoff's *The Avian Egg*—a most interesting book, full of exciting surprises—will know

that this research has great practical importance. There is more to scientific poultry breeding than feeding and cleaning.

For example, it is necessary on many occasions to have a fairly accurate knowledge of the calcium content of egg shells. Tyler and Geake have discovered that a tedious analysis can be avoided merely by measuring the shell's thickness and applying a reducing factor. Once the calcium content has been approximated in this way, the carbonate content can be calculated. Thus, the two most important constituents of egg shells can be estimated simply by putting a piece of shell under a micrometer!

Tyler and Geake also found a numerical relationship between the number of pores per square centimetre and the total evaporating area. Similar relationships exist between citric acid content and protein content.

One interesting and very important result of these re-

searches is that these factors of thickness and porosity can be used to distinguish between the eggs of different birds of the same species and variety. Each individual hen, it appears, lays eggs with common thickness and porosity.



Entropy is a subject that probably even Swift would have recognised as being important, for it is the "thing" into which the whole universe is changing. In the wide view, entropy is a measure of the molecular disorder of a system; it cannot decrease in any change but must either remain constant or increase. For the universe as a whole it is increasing. Its practical importance lies in the realms of thermodynamics.

Down on the earthly, laboratory level, entropy is the ratio of the amount of heat taken up during a reaction to the absolute temperature at which the reaction takes place. Obviously, each element and molecule has its characteristic entropy value. Until very recently it has not been possible to derive exact entropy values for any given atom or molecule. Even now, it is impossible to state a general rule that will give the entropy value of any substance.

But E. T. Turkdogan and J. Pearson of the British Iron and Steel Research Association have now shown that if the elements are correctly classified in the periodic system, their entropy values are functions of atomic or molecular volume. Thus, "Standard entropies, S , in calories per gram-atom or gram-molecule per degree Centigrade, of elements or compounds that belong to one subgroup are found to be related to atomic or molecular volumes at 298° K., in such a way that entropy increases with volume and complies with the equation:

$$S = aV^n$$

where V , the volume, is expressed in millilitres per gram-atom or gram-molecule, and a and n are constants for each particular subgroup."

The constant a depends on the type of compound, the periodic group of the cation, the cation-anion ratio, and the crystal structure. The constant n depends on the type of compound and the periodic position of the cation, but not on the cation-anion ratio, nor on the crystal structure.

There can be no doubt that this is a very significant contribution to fundamental chemistry.

MARY HELL'S

by Richard Wilson

It was just a small drinking place on Mars, but all the world's troubles could be found there. Large and small.

★

THEY CALLED her Mary Hell and said she came from there. She didn't, though. She had come from Cincinnati six years before, aboard the space liner *Superba*. She'd been a barmaid in the second class section, and had a two-year contract, but jumped ship when a sergeant in the World Government troopers asked her to marry him and live with him between manoeuvres in his off-the-post bungalow. She'd moved in and was even seriously considering becoming his wife some day, when one of the manoeuvres turned out to be the real thing—although it was only a short-lived insurrection—and the sergeant was shrivelled

up by a Q gun in the desert. The C.O. stretched a point and sent her his effects as next of kin, and with that precedent, she collected his insurance, which was enough for her to buy a thriving tavern near the spaceport at Iopa.

It was a long trek from Earth to Mars and the crews—strictly on the wagon en route—had powerful thirsts when they got liberty at Iopa. Within a year Mary had paid off the mortgage and the place was hers, free and clear. She called it that, The Free and Clear, but it continued to be known as Mary's Place—or Mary Hell's.

Apparently she had really fallen for the sarge, and his death did something to her, inside. She'd always been hard. It started with the orphan asylum she'd been sent to when she was five, and just when she had begun to

soften up the Q gun blast in the desert had replenished her coating of granite.

She didn't fool around with any of the customers. She served them their beer Earth style, or their whisky, and had supplies of the native product for those who'd picked up a taste for it, and for the Martians—remote descendants of the early colonists.

Her staff was female, entirely. It was good business, for one thing; and for another, Mary had a soft heart for her own sex, planetary differences notwithstanding. She had both Earth girls and Martian girls helping her behind the bar and at the tables, and any of the troopers or crewmen who made out-of-the-way cracks about the Martians soon found themselves on the outside, propelled there by Mary herself. As a result, Mary believed, she'd built up a clientele of right guys. Rough, maybe, but right.

Naturally there was a sour-

ball or two among them. One was Lieutenant Jeffrey Cole. Mostly he did his drinking at the officer's club on the post, among what he considered his own kind. But now and again he liked to go slumming, and at those times he visited Mary Hell's.

He brought his own bottle and he sat at a table by himself, off to one side of the room. His presence made the regular customers uneasy. He usually took out a notebook and could be seen scribbling in it as he sipped his drink and looked out over the rest of the room. No one knew what he was doing—he might have been sketching, or just doodling—but the men were convinced that he was taking notes, to which he would refer when it came time to make up duty rosters and gig lists.

Mary liked Lieutenant Jeffrey Cole even less than she liked his father. His Old Man was just that—the C.O. of the troopers. Colonel Carter Cole; Old Triple C.,

cold, cantankerous and choleric, his men called him. He was a tough baby, a stickler for regulations, but a first-class fighting man, and a man of honour. Mary didn't like the colonel, but she respected him. She had no respect for the son.

JoAnn Deveraux was one of Mary's girls. One of the Earth girls, from Lexington, Virginia. She walked into Mary's place one afternoon and asked for a job. Mary had known about her arrival as a paying passenger aboard a space liner. There weren't so many women on Mars that a new one could come in without causing comment throughout Iopa. JoAnn was a fragile, petite blonde who came with two trunks and four bags, but came alone. She had no husband and no family on Mars. She offered no explanation and Mary didn't ask for one. She put the girl to work.

JoAnn didn't mix very well, either with the other girls or with the customers. She had

a sort of withdrawn attitude toward them and toward her job, not quite aloof. But she did her work well and Mary had no real cause for complaint.

Not until she began to notice JoAnn in relation to Lieutenant Cole. The girl obviously had known him before. Mary watched and listened, and asked discreet questions here and there.

There was Cole's reaction the first time he saw JoAnn. It was one of disbelief and distress. He stared hard at her, drank one drink and left. JoAnn watched him go from another table, where she had been taking an order. She stood with the pencil poised above the pad, her eyes full of the past.

Lieutenant Cole's school, it seemed, had been Virginia Military Institute. V.M.I. was in JoAnn's home town.

There were other bits and pieces which Mary was able to fit together. Jeffrey Cole and JoAnn Deveraux had had a romance. It had been

an intense one, and in his senior year she told him a little secret. He didn't think it was any concern of his, and told her so. Then she threw away her pride and pleaded with him to marry her. That gave him a big laugh.

And now here she was, in Mary Hell's, on Mars. Only two things could have brought her all the way from Earth, Mary reasoned. One would be revenge. The other? Mary laughed cynically on the outside, but within her she knew the answer. The other would be love.

IOPA was the capital of Mars, and the most metropolitan of its few cities. But the imported civilization of Earth never extended very far from the centre of any of its settlements, and a few miles out of town there always was a frontier atmosphere.

Mary Hell's place had been an old military gunhouse, since abandoned by the troopers. The administrative offices

upstairs had been converted into a kind of rooming house, where some of Mary's girls stayed rather than make the long trip back to Iopa. The deep cellar, which once had been a storage place for deadly munitions, now held Mary's liquor supply.

The dining and drinking room itself was on the ground floor, spacious and low-slung. Racks behind the bar, which once had held Q guns and old fashioned short-range rifles, now held an array of multi-coloured bottles amid the crystal glitter of glasses. An old loading platform was used occasionally as a bandstand. The red and white checked tablecloths were reminiscent of the pioneering old spaceport in the New Mexican desert—and any number of other ports of call.

Lieutenant Cole didn't come back to Mary's for a while. He apparently spent a lot of time thinking over the situation. But then he returned. He made an insolent half-bow to JoAnn and sat down with

his back toward her. Thereafter he ignored her.

The girl went pale and steadied herself on the edge of the bar. She went on with her work, but every once in a while Mary would look up to see JoAnn pause, midway in something she was doing, to stare at him as if from a trance.

Cole was sitting at his usual table, with his usual drink made from his own bottle, and had the notebook open in front of him, as usual.

There was another new waitress in the place that night, a Martian girl named Lania, pert and violet-skinned, and with an eye for the men. Her arms and legs were long and slender, tapering into exquisitely-wrought hands and feet. Her skin had the delicate semi-opacity of violet jade, and her finely-drawn lips were barely rosy. Her brows were neat, sensitive black lines, her eyes wide-set and clear blue. Her hair, like that of Earth Asi-

atics, was silken, straight and ink-black.

She was by no means a typical Martian woman. The colonial descendants tended to be drab. Lania might have been considered the ideal among her sex, and it was no wonder that the lieutenant noticed her.

Mary didn't know who started the flirtation and she didn't care. She had only one rule about that sort of thing. If one of her girls made a date with a customer, she had to keep it. Mary didn't hold with the business of jollyng a customer along just to keep him buying drinks. Any of her girls who stood up a man found herself fired.

But this time the girl was stood up. Lania told Mary about it the next day. Lieutenant Cole had promised to meet her, in his sand car, outside the Hotel Mars in downtown Iopa at such-and-such a time. He didn't show up, although the girl had

waited in the cold, in her thin evening dress, for an hour.

Mary didn't get it. She tried to fit it all together, in relation to JoAnn. Was Cole trying to hurt the Earth girl, after all these years—punish her anew for having followed him to Mars? She had seen him look covertly at JoAnn while he was talking to Lania, making the date. And she had seen JoAnn's white face. Mary shook her head. She didn't know much about triangles.

The next night the lieutenant was in again. Mary switched Lania to another table and went over to talk to him. Cole laughed at her. It was a gag, he said. He had no intention of keeping the date and she should have known it. He was an Earthman and the son of the C.O., and he didn't go chippy-chasing around with any of these Martian women.

Later she said to the girl: "He's trash, Lania, honey. Don't you bother with him. If you've got to have a boy friend, get yourself a real

man. There are plenty of them here, worth ten of him."

So Lania got herself a corporal, a nice boy who worried about the dirt he got under his fingernails from repairing rocket engines, and carried around in his wallet a picture of his mother.

The boy, Joe Brewster, saw Lania half a dozen times in Mary Hell's before he got up courage enough to ask her to have a date with him outside.

Lania was radiant when she reported for work the following evening. Mary had heard her in the room she rented on the second floor, singing a wild Martian love song as she dressed.

"He's a sweetheart, that Joe," she told Mary when she came down.

Mary smiled. "Think you'll be able to wait on table tonight from up there in the clouds?"

Lania's natural beauty was heightened by her happiness, and Lieutenant Cole was well aware of it. She had ignored the officer since her woman-to-

woman talk with Mary, and this troubled his vanity. But he was bothered, not only in his lieutenant's bars, by Lania's genuine interest in a mere enlisted man. He became gradually aware of something else—that his first interest in her had grown into a kind of obsession for Lania which he could not control, and which his snobbery could not accept. The greater frequency of his visits to Mary's place were frightening indications of the degree of his passion for the Martian girl.

It might have been mere coincidence, of course, that for a week running Corporal Joe Brewster found himself either on detail at night, or restricted to the post for having been gigged at inspection.

But then Cole made another play for Lania.

When he was sure JoAnn was watching, he asked Lania something in a condescending, insulting way, as his eyes travelled up and down her

slender body—and Lania spat in his eye.

JoAnn ran out of the room in humiliation.

Mary was around the bar and across the floor to the table in three seconds. Cole started to rise from his chair and reach toward his holster as Lania turned her back and walked off.

Mary grabbed the lieutenant's right arm and eased him back into his seat. She was smiling and her voice was soothing, but her grip was steel.

Cole sat back and put his hands on the table. But Mary, thinking back to that moment, later, believed it was then that Lieutenant Jeffrey Cole stopped being a sane human being.

He paid his check, and left soon afterward.

He didn't return until the night of Mary Hell's New Year's Eve party.

He came early, alone, and with two bottles. He drank steadily. And as he drank, he brooded.

He brooded about the possibility that he was only infatuated with Lania. That would be understandable; she was a beautiful creature . . . Yes, that's what she was, he told himself, a creature, a Martian, a cheap colonial. And he was a Cole—a Jeffrey Cole, moreover, named for an aristocratic ancestor who had been a general in the confederacy under Robert E. Lee. The old Jeffrey might have been similarly attracted to a lovely Negro girl on his plantation. He might even have succumbed to her body. But he couldn't have let himself *love* her. There was the word in his thoughts and the feeling in his heart.

And if it were love—there was that word again, insisting on being chosen—could he stand it? Could he live with his passion and his prejudice too? It might be enough to kill him.

Or he might have to kill her to be able to live again, himself.

He couldn't live with that

kind of love. His notebook was out and he wrote something in it, in big, drunken letters:

*"There is love with which
you cannot live.*

*There comes a life in
which you cannot love."*

Thus, on New Year's Eve in Mary Hell's, Lieutenant Jeffrey Cole sat and brooded, and drank, and wrote in his notebook.

Lania looked gorgeous as she carried drinks to the tables. Joe Brewster hadn't arrived. He'd been stuck with a tough engine overhaul, but he'd sent word that he'd be there by ten sure. Lania joked with his buddies and pirouetted for them in the evening gown she'd made especially for tonight and Joe. By the standards of any planet, she was ravishing.

JoAnn Deveraux, by contrast, was at her worst. Slender and pallid, her vivacity once had been her greatest appeal. That and doll-like features, cast in an all-em-

bracing sweetness. Tonight her vivacity was gone, her expression leaden, under the crushing evidence of Cole's indifference. She had made an effort to reconcile him, gone to his table on a good enough pretext. His drunken contempt for her told her everything she knew and everything she would never believe.

She drank, then, to warm her numbness, and hung suspended in the cigarette smoke and revelry like a smiling marionette, with two bright rouge spots and unblinking eyes fixed on nothing.

Joe Brewster got there at ten thirty. He'd taken extra time to scrub up. His uniform was immaculate over his muscular body, but his fingernails were unusually dirty. The job had been a rough one and, he suspected, unnecessary. He sent a burning look across the room to the lieutenant, but his friends pushed him into a chair and set double drinks in front

of him, so he could make up for the lost time.

Soon he was up and dancing with Lania, and it began to look as if it would be a fine party.

It got a bit wild, too, as was to be expected when men away from home celebrate an Earth holiday so wrapped up with auld lang syne as New Year's.

Some glasses were smashed, and a table was overturned amid the horn-blowing and the jazz from the band at midnight. Joe kissed Lania. His buddies kissed Lania and Joe kissed his buddies' girls. Mary didn't have a man of her own, and of course everybody went over to give her a big hug and a kiss.

Only JoAnn Deveraux and Lieutenant Cole were removed from it all, and from each other, by as much space as the room would allow.

Cole still sat alone at his table, watching it all with a half sneer. The half of him that wasn't sneering was stupid drunk, so the guys said.

At twelve ten Joe Brewster went to the men's room. When he came back Jeffrey Cole was no longer at his table. Cole had worked his way over to a corner, through the singing and the kissing, and he was holding Lania in his arms, in a passionate embrace. Joe's vision was blurred, but it seemed to him that she wasn't struggling.

There was no clear report of what happened next. Suddenly the lieutenant was apart from the girl, in a weird, falling crouch. Some said she had driven her knee into his groin. Joe had battered his way toward the corner and Mary was charging out from behind the bar. JoAnn fainted.

JANUARY 1st, 2023, dawned.

There was a padlock on Mary Hell's place and a trooper with a Q gun stood guard at the door.

Corporal Joe Brewster was in the stockade, awaiting a court martial, on a charge of striking a superior officer.

Lieutenant Jeffrey Cole was in his quarters, examining a black eye in a mirror and nursing a hangover.

Mary was in Colonel Cole's office, indignant.

Colonel Carter Cole was ageless and erect, with the kind of lean virility that self-discipline and morality impose. His hair, close-cropped, was not quite grey. His face, hardened and clean-shaven, was almost young. His detachment was that of an ascetic. But his grey, direct eyes were fair, and his manner was unimpeachably courteous. He was no one's friend and no one's enemy.

"Colonel," Mary said, "I know you've been just itching for a reason to close down The Free and Clear, but I'm here to tell you you don't have it, and that you won't have it as long as I'm running the place. You had the medical boys around looking for illegal liquor; they didn't find any. They hauled off my girls to the dispensary—without a warrant, I might add—

and it was pretty embarrassing to them. They're waitresses, and they have as much right to their private lives as you have, you know. Now, just because your son got himself gowed up, you close down the place, as if I was to blame because he can't hold his liquor."

"The issue," said the Colonel, "is not that someone got drunk in your place. The issue is that, during a brawl, an officer of the World Government troopers was struck by one of his men. That is a court martial offence. The fact that the officer was my son has absolutely no bearing on the matter, and I hope you know me well enough to believe that."

"I believe it. But I wonder if you know the facts. You've probably heard your son's story. Now hear mine. The lieutenant was not struck by Corporal Brewster, or by anyone else. He was falling-down drunk, and he fell down after he made a pass at a girl. He knocked his head on a

chair as he fell, and that's where he got his shiner. That's the way it happened. I saw it myself and I can produce a dozen other witnesses. How many can the lieutenant produce?"

"I had acted on the strength of his word—the word of an officer and a gentleman," said the colonel.

"Well," said Mary, "I haven't got any 'gentlemen' to speak for me—just men and women who were sober enough to see what went on. A court martial would acquit Joe Brewster sure, and it would make Lieutenant Cole look mighty foolish. So I'm asking you, as a right guy, to see if my facts don't stand up better than his—and then to let Joe Brewster out of the stockade and to take the padlock off my place."

"You may be sure," said the colonel, who was frowning down at his desk, "that I will act in accordance with regulations, and on the facts as I see them."

"That's all I ask, Colonel."

Two hours later Corporal Brewster was free, Mary's place had reopened for business and Lieutenant Cole was on his way to the C.O.'s carpet to give an explanation of his conduct.

LANIA AND JOANN were polishing glasses behind the bar. The dull afternoon sun, reflected from the desert sands, was glinting through the windows. There were no customers in the place, and Mary was out back superintending the delivery of a liquor shipment.

"Joe's out of the stockade," Lania said, happily. "They've dropped the charges that psychotic, Jeffrey Cole, tried to frame him with. And I hear the colonel's going to give his son a real tough bivouac to take out into the desert."

"I wouldn't call Jeffrey psychotic," JoAnn said. "I don't think that's a very nice way to talk about a person you hardly know."

"Listen, sweet girl, I've been around these Earth guys

for a long time. I don't know how they are back home, but up here they fall into two categories. There's the good egg who doesn't think that just because he's off on Mars he can act like an animal, and there's the kind that thinks he can forget everything he ever learned about decency, just because Earth is a little green star now, and because he's among different people. And Lieutenant Jeffrey Cole definitely falls in the last category."

"You have no right to talk that way," JoAnn protested.

Lania laughed shortly. "Who has a better right? And I will talk that way because I think you've got a crush on the guy. Why, I don't know. I can't imagine a decent person like you falling for a no-good piece of trash like that."

JoAnn's eyes snapped and her southern blood boiled. "You just keep you opinions to yourself, you—you Martian snip. What do you know about it? What do you know

about people like us? This is none of your business. Don't meddle in the affairs of your betters."

"Why, you superior little bitch!" Lania slapped her damp towel across JoAnn's face, and when Mary rushed in the two of them were screaming and pulling each other's hair.

Mary broke it up. She sent JoAnn home and banished Lania to the walk-in refrigerator.

"Make sandwiches for tonight," she said. "And cool off."

Mary Hell took out a dry towel and finished polishing the glasses. She felt less and less like her nickname, and more and more like a grandmother, with grown-up grandchildren who needed disciplining.

LIEUTENANT Jeffrey Cole crumpled up the letter and threw it across the room. Then he picked it up, smoothed it out and read it again. It was from JoAnn.

It said a lot of hysterical things, but the gist of it leaped up at him out of the last paragraphs:

"I still love you, Jeff, and you must know this is why I came to Mars and took this terrible job. I want you back. So does your son, who does not have your name. You've got to marry me so I can hold my head up again with my family. And because I love you so much I have lost all my pride. I know that you must love me, remembering everything. We belong together, you and I and little Jeff. Meet me tonight so we can talk."

It was signed: "*Helplessly, JoAnn D. Cole.*"

JoAnn, typically had a P.S.:

"If you do not meet me I will go to your father and tell him everything. I know him for a gentleman who will see right done. His blood is your blood, and our son's, and I am sure that we will be happy at last if you will forget your pride, as I have mine, and come to me."

Tell the old man, would she? JoAnn Cole, was it? Had

to marry her, did he? It was fantastic. You didn't pay the rest of your life for a mistake you'd made once, when you were a kid. It was her mistake more than his; let her pay.

She was crazy to have come to Mars, to have got a job in that gin mill. And she was crazier if she thought he'd meet her now, for a "talk."

He had to be rid of both of these women—one who represented everything he should want, and did not, and the other who represented everything he wanted, and should not want.

JoAnn had forced it. He was beginning to see the solution, and it was simple. JoAnn must die because she threatened him eternally. And Lania had to be sacrificed because to not have her while she lived would be unendurable. When she was dead he could remember her as mute and exquisite, and treasure the memory. He could

no longer bear to think of her as living and vulgar, and possessed by vulgarity.

He burned JoAnn's note. He watched the flames devour her plea and her threat. He planned carefully. JoAnn and Lania had fought many times lately. Everyone knew that. Lania was fiery and unpredictable—a Martian who did not like an Earth girl to call her sub-human.

Lieutenant Cole stood up and zipped his uniform. He looked in the mirror and straightened his cap. He put out his cigarette and buckled on his pistol belt.

THEY FOUND JoAnn Deveraux's body crumpled up on the cold ground in an alley behind the Hotel Mars. The pistol blast had been from up close. Her coat was charred, and so were the dress beneath it and the flesh beneath that.

The civil authorities—that meant the Martians—had jurisdiction, and their investi-

gations led them directly to Mary Hell's. The man assigned to the case was Inspector Grom, who was round and short, but whose untamed, erect black hair lent six inches to his height. He was one of the rare Martians who had to wear glasses. He had chosen heavy, square-rimmed frames, and they gave him a profound look, although he was light-hearted by nature.

Mr. Grom came with a constable, and questioned Mary, as the dead girl's employer. Mr. Grom, apparently, had done some spade work elsewhere, because he went right to the question of JoAnn's relations with the other girls. Mary had to admit that they could have been better.

"Ah," said Mr. Grom. "And were there any persons—or was there any one person—who might have had reason to hate the deceased?"

Against her will, Mary admitted that JoAnn and Lania did not get along at all, especially toward the end.

There had been those arguments, and the hair-pulling match. Mr. Grom prodded the details out of her.

"I see," he said. "Now—the girl Lania has been questioned and it is her contention that she was in her room, here, at the time of the killing. It would be helpful to us if you could corroborate that."

"Of course she was up there, if she says so."

"Ah, but you must say so, too. Did you see her go to her room, or did you see her in it, or hear her there at the disputed time?"

"No," said Mary. "I was busy downstairs."

"Then she could have gone out—I say could have, not did—and could have returned without your knowledge?" Mr. Grom asked.

"Yes, I suppose so. But the kid didn't do it. If you want to find the real killer look into what Lieutenant Cole was doing. He had all the motive in the world, from what I understand. He had to kill

JoAnn to keep her from exposing him as the father of her child. Pick up that psycho and you'll have the real killer, Mr. Grom."

The Martain inspector smiled. "Madam," he said, "I do not suggest to you what ingredients you should use to create one of your excellent cocktails, and I think you should restrain yourself from advising me in police matters. I am here to take a statement of what you know of your own knowledge, and not of what you 'understand,' which is hearsay.

"Now we must take Lania in charge, I'm afraid. Constable, please fetch her from her room."

"You can't railroad that girl to the firing squad. You don't have a shred of evidence. You don't even have the gun."

"Ah, but you are meddling again. But let me say just this to you: that young girl is of my own people and, although it is my duty to collect evidence against her, since there is doubt about her

innocence, it is more than just my duty—it is my ardent desire to see her set free if she is not the killer. The gun you ask about has not been found. From the type of wound, it probably was a service pistol, Q45. Corporal Brewster of the troopers is being questioned concerning that at this very hour. We will see if he procured such a weapon for her."

Lania came down the stairs with the police constable. She looked tired and frightened, but she held herself erect.

Mary went to her and squeezed her arm, gently. "You didn't do it, Lania, honey, did you?" she asked.

"If I was going to kill anyone, it would have been him, not her," the girl said.

LIEUTENANT COLE didn't much like being questioned by Mr. Grom. He declined the invitation to be seated and looked down at the little Martian.

Cole was composed, and felt in command of the situation, even after Mr. Grom produced the deposition which had been taken from JoAnn's father in Lexington, Virginia, and messaged to Mars.

The lieutenant had his story well rehearsed.

Yes, he admitted, he had known deceased on Earth, years ago. No, he was not the father of her child. Who was, then?

"The man could have been any one of half a dozen persons," he said, blandly.

His whereabouts on the night of the crime?

"I was in my quarters, reading. I did not leave the post that night. You can check the pass roster." He did not mention that he had made his way out and back again through the dunes at the far end of the gunnery range. No sentry had seen him.

Mr. Grom made notes of the answers to his polite questions.

"I see that you are carrying your service pistol, Lieutenant. May I examine it?"

Cole handed it over. Chambers full; it had not been fired recently—or cleaned, either—in some time. Mr. Grom commented on the fact.

"Careless of me," Cole said. He smiled with one side of his face. "I do hope you won't report me to my C.O."

Mr. Grom made a note of the serial number of the pistol and handed it back.

"That will be all, lieutenant. Thank you."

LATER THAT DAY Lieutenant Cole was in Mary Hell's. He had to be there to cinch the case against Lania, and prevent any further suspicion from attaching itself to him.

He had with him the pistol which had killed JoAnn Deveraux—his other service pistol, acquired surreptitiously during a visit to the ordnance shack, and not registered. He

had to get it to Lania's room and plant it in a hiding place the police might have overlooked the first time they searched the room, and then see that they found it.

The light faded as a wind-storm blew up outside. The gusts hurled grains of sand against the side of the building in a rain of grit.

The lieutenant had several drinks, waiting for an opportunity to make the plant. He kept looking toward the stairs, and Mary kept an eye on him, suspiciously. Something was up with the lieutenant. There was no one else in the bar with them, and they didn't talk, which was all right with Mary. She decided to give him his head and see what happened.

"Lieutenant Cole," she said, finally. "I have to go down the cellar for about ten minutes. Would you sort of watch the place and see that no one makes off with the stock?"

The officer was unusually

amiable. "Sure, Mary. You go ahead. I'll stand guard."

"Thanks." She disappeared down the stairs and pushed things around, making noise that would be audible to him. After a minute she heard the faint sound of his footsteps, but only by straining her ears. She waited a few seconds longer, then crept silently up the stairs to the second floor. She went on tiptoe along the carpeted hall and peered around the open door of Lania's room.

Lieutenant Cole was holding a gun in his hand, under a handkerchief. She saw him wind open the window and fasten the gun beneath the sill outside with a piece of wire.

Mary turned to leave. As she did so her shoe scuffed on the carpet. The lieutenant whirled. In one motion Mary pulled the door of the room shut and bolted it from the outside. She fled down the stairs as he hammered on the door.

She dialed the post on the communiphone and asked to be put through to Colonel Cole, urgently.

THE COLONEL was there in five minutes.

"Never thought I'd set foot inside your place, Mary," he said. "What's this all about?" She told him; he went with her up the stairs.

"Son," he said through the door. "Is that you in there?"

"Yes, sir." The voice was calm.

"Unbolt the door, Mary, please."

The lieutenant was standing by the open window. The windstorm had died down and dusk had come. He had retrieved the pistol. It was in his right hand, again in the handkerchief.

"I'm waiting for an explanation, son," his father said. Mary turned to leave, but the colonel motioned her to remain. She switched on the lights.

The lieutenant broke a

long silence. He sat down on the window sill.

"All right," he said, "I shot her. I had to, to keep her from disgracing me—and, through me, you. I did it for you as much as for anyone, sir."

"What are you talking about?" the father demanded.

The son told the whole story, haltingly at first, but then with growing confidence. His eyes were wild, but his voice was calm.

"That's the way it had to be," he said, "to protect our good name. And we can still protect it. They've got a good case against the girl—that Martian creature. She's only a sub-human, anyway. She's not important. And when they find this gun here they won't have any choice but to convict. No one will know, except you and me—and her. And we can buy her off. How much do you want, Mary? How much to keep quiet and say nothing?"

"Why, you swine!" she said. "You filthy——"

Lieutenant Cole sprang to his feet. His face twisted in hate and fury. He shot her once, full in the face. "You bitch!" he cried. "No bar-room woman talks to me like that." His mouth quivered, then tears came to his eyes. "You had that coming a long time, Mary Hell."

Colonel Cole stood up as if under a great weight. "Put your pistol down, Lieutenant," he ordered. "Put it down or kill me, too."

The younger man looked out of the window, into the darkness. He listened. There was no sound.

"It's all right, Dad," he said. "It's all right now. Nobody heard, and she's out of the way. We don't have to worry about anything now. You'll protect me, won't you? You always have, ever since I was a kid. You can't stop now, can you?"

Colonel Cole's sigh was a breath that went back over the years. "Yes, I can stop.

Put down your pistol, Lieutenant. I'm not your father now. I'm your superior officer, and it is my duty to place you under arrest."

Young Cole began to tremble. It started in his hands, then spread throughout his body. The pistol slipped from his fingers and thumped on the floor.

"Dad," he sobbed. "Daddy . . ."

NOBODY HAD known Mary Hell had any folks, least of all among the clergy. But in a week, on the same day that Lieutenant Jeffrey Cole hanged himself in his cell, the Reverend Mr. Robert Helstrom arrived from Earth.

He had come to take his sister's body back for burial in the graveyard of the Bendale Baptist Church.

Colonel Cole walked slowly across the spaceport with the black-robed minister, behind the open car carrying Mary's coffin to the Earth-bound ship.

"Your grief would be great-

er than mine, Colonel," Mr. Helstrom said, "if grief were capable of measurement."

The colonel made himself a bit more erect. He put a hand on the shoulder of the other man, clumsily.

The minister looked across the utter flatness of the spaceport, to the sandy, pastel hills far beyond.

"Mars is much like Earth, in many ways," he said. "Do you know this book that I have? It was in my sister's room. It is a great book, of which I had heard. I suppose it might be called the Martian Bible. Mary kept it next to the King James version of our own Book.

"There is a verse which I found in it. I have memorised it:

*"When the righteous men
came to the great hall
Where the slain were laid
to rest*

*The grey face of death
looked up from the silence
And mocked the conceit of
language,*

*The delusion of colour,
cause and cabal.*

*The slayers and the slain
became as one."*

They walked on in silence a little way longer.

"Perhaps it is of no comfort to you, as it is to me.

"Mary had the passage marked." The minister looked up into the Martian sky. "It is too long for her headstone. I think that will say merely:

"'Mary Helstrom, born 1977, died 2023, in goodness and mercy.'"

Chemical Analysis at Home

Second in a short series of articles on this fascinating topic.

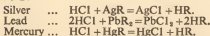
First of all, here are the chemical names of the substances we said you could analyse in the previous article in this series. Table salt—sodium chloride. Glauber's salts—sodium sulphate. Blue vitriol—copper sulphate. Green vitriol—iron sulphate. Sal ammoniac—ammonium chloride. Plaster of Paris—calcium sulphate. We hope you managed to get them all correct!

Now, passing on to analysis proper, there is the system of wet tests, reactions in solution, which enable us to find out which metals are present. Non-metals will be dealt with in the next article.

Take the substance you wish to analyse and dissolve it in water. (Only distilled water should be used in analysis.) Add a little spirits of salts (dilute hydrochloric acid). If either mercury, silver or lead is present, you will get a white precipitate. But how do you tell which of those three metals is present? Well, if the ppt. (this is a convenient abbreviation for precipitate) turns violet in sunlight, you have silver chloride. If it dissolves in hot water you have lead chloride. And if it remains unchanged, mercury is present.

Now the ppt. you obtain with hydrochloric acid will only tell whether one or more of these three metals is present. The chlorides of all other metals will stay in solution and you will get no ppt. So if you do get a ppt. with hydrochloric acid, you filter off and test the filtrate for other metals.

Here are chemical equations expressing the reactions with hydrochloric acid:



(In these equations the symbol R stands for a non-metallic radical.)

This is the routine procedure all through this type of analysis; you add a substance which will precipitate a *group* of metals; you filter, test the ppt. for individual metals in the

group; and add a substance to the filtrate which will ppt. another group of metals, and so on.

The following table shows you which substances ppt. which groups of the most commonly occurring metals:—

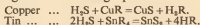
<i>Precipitating substance</i>	<i>Metals precipitated</i>
Hydrochloric acid (HCl)	Silver, Mercury, Lead.
Hydrogen sulphide (H_2S)	Copper, Tin.
Ammonium hydroxide (NH_4OH) ...	Iron, Aluminium, Chromium.
Ammonium sulphide ($(NH_4)_2S$) ...	Zinc, Nickel.
Ammonium carbonate ($(NH_4)_2CO_3$)	Calcium, Barium.

The precipitating substances are used in the order given in the table, one after the other. The only other common metals which may be present are magnesium, sodium and potassium. These must be tested for separately because they are not easily precipitated.

All the precipitating substances in the above table can be bought cheaply except hydrogen sulphide. This you must make yourself. Remember that it is a poisonous gas and must not be generated in a living room, unless near an open window. But the smell will probably see to that, for it resembles that of bad eggs!

Before adding ammonium hydroxide to ppt. the iron group, always boil the original filtrate, add a little dilute nitric acid and then a little ammonium chloride solution. And always wash, each ppt. on the filter paper with a little water before testing for the individual metals.

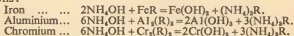
Now, briefly, for the separate metals. Hydrogen sulphide reacts according to the following equations:



† Boil the ppt. from hydrogen sulphide with dilute sodium hydroxide and filter. Keep the filtrate and label it A. Boil the remaining ppt. with dilute nitric acid and add a drop or two of sulphuric acid. Stand for a few minutes and add ammonium hydroxide. If copper is present a blue colour will appear.

Add some hydrochloric acid to the filtrate A. If no ppt. forms, tin is absent. If you do get a ppt., filter and reject the filtrate. Boil the ppt. with strong hydrochloric acid, then dilute with water and filter if cloudy. Reject the ppt. Add some pure iron wire to the filtrate and boil. Then add some mercuric chloride. A white ppt. shows the presence of tin.

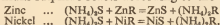
Ammonium hydroxide reacts according to the following equations:



Mix the ppt. from ammonium hydroxide with water and add a little sodium peroxide. Boil, dilute with water and filter. Keep the filtrate and label it B. Dissolve the remaining ppt. in boiling dilute hydrochloric acid and then add potassium ferricyanide. If iron is present, a deep blue ppt. forms.

If the filtrate B is yellow, chromium is present. To test for aluminium add a large amount of ammonium chloride and stand for a few minutes. A white ppt. shows aluminium present.

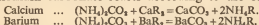
Ammonium sulphide reacts according to the equations:



Stir the ppt. from ammonium sulphide with cold, very dilute hydrochloric acid and filter. Keep the filtrate and label it C. Heat the remaining ppt. with strong hydrochloric acid and add a piece of solid potassium chlorate. Evaporate to dryness. A yellow residue shows nickel present.

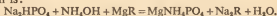
Add a little sodium hydroxide to the filtrate C and filter if cloudy. A white ppt. on passing hydrogen sulphide through the filtrate shows the presence of zinc.

Ammonium carbonate reacts according to the equations:



Dissolve the ppt. from ammonium carbonate in warm dilute acetic acid and add potassium chromate. A yellow ppt. shows the presence of barium. Filter, add ammonium hydroxide and ammonium oxalate to the filtrate. A white ppt. shows calcium is present.

The filtrate remaining after the addition of ammonium carbonate is tested for sodium and potassium by the flame test described in the previous article. To test for magnesium, add ammonium hydroxide and sodium phosphate. A white ppt. shows the presence of magnesium. The equation for this reaction is:



Next month the article in this series will deal with how to identify the R's!

Suppose no one had split the atom.
What would we do when coal and oil ran out?

The Lava Seas Tunnel

by F. G. Rayer and E. R. James

"Sit over there!" Steve Martel snapped. He twisted round in his seat and impatiently grasped the last switch on the panel. His eyes narrowed as he looked back over his shoulder. "If you want to climb back to the surface I'll give you five minutes. If not, sit by the communications panel. You can't stand, and you've made us late enough!"

The latecomer looked hurt. He hesitated, then stepped down to the insulated floor of the circular control room. Steve Martel flicked down the switch and the great, curved hatches swung together. He examined the fuel gauges, now standing at maximum, and the radax scanner, which revealed the rock strata below the machine. When he signalled, they would commence

to bore down through those pictured layers—down through the Earth's crust, until the deepest mines were like mere pin-pricks when compared with the depth of their shaft. Millions of tons of solid rock would be above them...

He refused to think of it, but his throat felt dry as he switched on the internal 'phone connected with the engine room.

"McGilligan, prepare motors!"

"Yes, sir—"

A low sound began, mounting to a growling rumble. Steve Martel turned in his seat to the officer who had taken his position at the communications panel. The officer nodded. Martel switched his 'phone to his observation engineer, Hedg-

erley, below him in the nose of the mighty boring machine.

"Ready, Hedgerley?"

"Ready, sir."

How smooth the reply was, Steve Martel thought. How strongly it contrasted with his own tension! But then, Hedgerley had not taken part in the earlier deep boring, when . . . But that was one of the things he must try not to think of.

"Couple all drives," he ordered.

"Coupled, sir."

Martel depressed the master switch. A screaming roar shook the floor, echoing like the tattoo of a drum. Hedgerley's voice came over the reproducer.

"Temperature of rock twelve graduations above melting level. Depth of liquid lava increasing. Two—five—ten feet. Heat dispersing at maximum rate permissible. Ready for stage two." Then, in less mechanical tones: "It's going to work!"

Martel wiped his brow. Of course it was going to

work, he thought. It had before—when there had been the accident which he must try to forget.

"Prepare stage two!" he ordered.

Turbines whined and flames glowed redly through the observation ports of indestructible mica. Below them, the rock made molten by the huge flame projectors was being sucked away. It would be ejected upon the walls of the boring, giant sprocket holes being formed in it as it solidified, so that the machine could wind itself back up to the Earth's surface. Steve Martel checked that the mechanism was working correctly, then operated controls which lowered the machine ponderously to the new bottom of the shaft. Twice he repeated the sequence, then changed to automatic control. An inferno raged below, then the suction turbines screamed. Came a moment's silence, then the huge machine sank a further stage.

He turned in his chair to the communications operator. "Send following report to surface: *Going down; will repeat signal every twelve boring cycles.*"

The operator's face was scarcely visible behind the padding of his heat resistant suit. He nodded.

"Reporting as directed, sir!"

Steve Martel nodded with satisfaction. The youngster had pluck and he could forgive him for his lateness, now. Flame boring was no job for weaklings. Grown men could tremble as ruddy light flickered beyond the mica windows, and the machine shuddered while molten rock splashed up through the heat-exchanger engines, to be plastered on the rocky walls above. Building its own shaft as it descended, the mighty machine was terrifying.

Forty boring cycles had been reported when McGilligan's voice came through the amplifier. "Ten degrees tem-

perature increase in the heat-batteries, sir."

Martel watched the climbing needles on his panel. Perspiration stood on his forehead. "Report increase to surface." he ordered, over his shoulder.

It was already too hot, Steve Martel thought. The machine worked as in the heart of a fiery furnace, and their safety depended upon maintaining a bearable temperature. Martel thought of his son, and how they had discussed this problem only the night before. Dave had agreed that it could be dangerous.

"I'd like to come, dad," he had said.

Steve Martel had shook his head. "No, son. Not this time."

They had left it at that. Martel had not told his son all the reasons why he could not go . . .

McGilligan's voice came through the speaker in an abrupt cry, halting Steve Mar-

tel's thoughts. "The heat disperser's not working, sir! Halt the descent!"

Martel's hand closed over the switches; the rumbling below slowly subsided as fuel was cut off from the jets. "A fault has developed?" he demanded.

"Yes, sir!" McGilligan's voice quivered. "In the thermostats. It'll take—well, two hours at least, to clear. I knew the final construction was rushed too much! Things were not checked properly—"

"All right," Martel interrupted. "It's not for us to complain, but to patch things up!"

He went to the communications panel, made a report, then jammed the microphone back into the operator's hand. The operator seemed stunned by the news, he thought. But he was not the regular officer. The latter had reported ill, and a substitute had been arranged at the last moment. Martel had scarcely looked at him.

"Come and watch, if you

like," he said. "Nothing for you to do here, for the moment."

He climbed down to the central deck. The door of a mica dome in the hull was open, showing instruments and tools inside. From slots near their feet, fumes rose, catching their throats. A large man was climbing down a metal ladder to the heat-exchanger housing which ringed the whole machine.

"McGilligan's soft," Martel grunted, watching him. "But he's the best man I could get."

The operator shielded his face from the rising heat, nodding. Steve Martel wondered whether he knew that there had been an accident before, and that they had been buried alive. The deep boring was dangerous. They aimed to penetrate to the fires at the Earth's core, whose heat could be tapped to provide power for industries above. Only in that way could industry be saved. There was no more coal

to mine, and no more oil to draw to the surface.

"If we don't get power, we're finished," Martel had said. "There's no other way to get enough for industrial purposes——"

Two and a half hours later the descent began again. From his central controls Martel gave orders; behind him, the communications officer transmitted reports to the surface. The hours dragged. Steve Martel felt his clothing sticking to his back and his eyes and head ached. Many things could happen. Once before, a nozzle had become blocked and the fuel blown back, melting steel like butter . . . That danger was one of the reasons why Dave could not come.

An abrupt shudder ran through the hull. A hammering sounded on its shell. Awakened from his thoughts, Martel grasped the master switch and dragged it over . . . fumes swirled round him, and his last thought was that per-

haps, after all, a nozzle had become blocked once again.

He became conscious slowly, heat searing his face and throat. He struggled to his knees. Before him was a jagged rent in the hull. Flames licked through it, lapping round the communications operator, who lay near his seat.

Martel dragged himself up, blinded by smoke. The operator's leather outer garment was burning. He beat out the flames, grabbed an extinguisher, and directed its jet round the control room and through the fissure in the hull. Coughing, he wiped his brow, and his eyes returned to the operator.

The helmet was gone. Golden ringlets covered the head, and Steve Martel felt astonishment.

"*Dave!*" he whispered.

The centre hatch opened and Hedgerley's face appeared. Martel dragged his gaze from his son.

"All right, Hedgerley?"

"Well enough—the blow-back missed me." His eyes went to the operator and his brows rose. "Just a kid. Too bad."

"Too bad," Martel agreed. He thought it best to say no more. He supposed that Dave had taken the position of the usual operator at the last moment—but that could wait. At the moment, the first thing was to get the boy to safety. There were three collapsible balloons—the machine's "life boats"—which could be released in emergency. With some luck, perhaps a lot, Martel thought grimly, one of the balloons might float up the shaft to the open world above.

Dave was stirring. Steve Martel made his face grim, and when Dave's eyes opened, Steve glared.

"What do you think you're doing, son, pulling tricks like this? You're going up in one of the life-balloons, *now!*"

Dave looked rebellious. "I'll not! You can't make me!"

Martel admired the other's spirit, but did not let that show. "You'll do as you're told!" he snapped.

"I'll not, then! There are only three balloons—for all of us!"

There was no answer to that, Steve Martel knew. He fumed, and abruptly wondered what had happened to McGilligan.

"We'll see!" he said.

He took down a respirator, adjusting it as he went. The outside compartment was intact. McGilligan, trembling like a jelly, was inside it, and Martel dragged him out.

"Pull yourself together, man! There's work to be done!"

McGilligan shivered. "Leave me alone. I've had enough!"

"Not while I'm boss!" Martel snapped. "Get back to work." He saw Dave had followed, and glared at him. "And you too! While you're here you're under my command!"

Dave grinned. "Thanks—sir."

They started to try to repair the damage. Knowledge of the enormous weight of rock stretching above them oppressed Martel. So did the knowledge that Dave was in danger. After sixteen hours of almost unbroken labour the store of spares was almost empty, but the huge machine was again in workable order.

"We'll take six hours rest," he decided.

Hedgerley and McGilligan exchanged glances; Dave said nothing, and Martel returned to his control chair, where he fiddled with the controls uneasily. The silence oppressed him. It was so like that first time, when he had been buried under tons of debris. The hours had grown slowly into days, hope of rescue completely abandoned—

He paced the floor, unable to sleep. His boots rang on the metal, leaving deep silence when he stopped. Once he

heard voices below. He returned to his seat and calculated the depth to which they had penetrated. The figure stunned him. Already *two miles* of rock extended above. Suppose the tunnel cracked, he thought, and the debris thundered down upon them? *That* would be worse than the first time. He mopped his face, heard a sound, and looked at the door. Dave stood there. He came in slowly.

"Dad, what's wrong?"

Steve Martel grinned crookedly. "Too good a memory, son. Stay and talk."

Dave shook his head. "I came to tell you that Hedgerley and McGilligan are up to something—"

Martel remembered the voices, whispering. He followed Dave down the ladder. A light showed, and a voice came from the deck below. McGilligan was on his knees, clawing at the fused rock below the machine, a torch in his hand. He looked up,

waved, and dragged stones from his pockets.

"Diamonds, Martel! Big as eggs! We're rich!"

Martel dropped lightly down to the bottom of the boring, still hot to his touch. "We're prospecting for heat—power!" he snapped. "Not diamonds. Money is no use when industry cracks up! We're boring again in five hours. Get back inside!"

McGilligan laughed unevenly. "Think you're always boss, eh?" he said. One hand went into a pocket and came out holding a gun. "I'm not boring any more," he said. "Not a foot!"

"We'll see!" Martel said.

He sprang. A foot caught in a crack in the uneven floor and he stumbled. The weapon exploded above his head. He twisted, but McGilligan had leapt for the deck edge and disappeared. Martel scrambled up, and halted. McGilligan was boring the weapon into Dave's chest.

"Stop, or I fire!" His eyes were red and wild. "Get in-

side! You're fools to think I'm staying down here any longer!"

Fuming, Martel retreated into the store room. He saw that Hedgerley was already there, then the door slammed on them and its bolt rattled into place. There was silence. Martel took up one of the tools littering the floor, and attacked the door. Once he paused as there was a jerk.

"He's taken a life-balloon," Hedgerley said, uneasily.

At last the door swung open under Martel's blows. The instruments in the control room had been smashed and were useless. The transmitter was ruined, though Steve Martel saw that the receiver still functioned. Both McGilligan and the third balloon had gone.

Minutes passed, and the receiver began calling them. They listened helplessly, unable to reply, and at last the voice dropped silent. They were once again on their own, Martel thought. It had been like that once before. But

this time he would not admit failure. If he did, there could never be another attempt.

"If we can get the machine working, we go down," he stated at last.

Hedgerley looked at him in amazement. "It's crazy!"

Dave appeared to have recovered, and shook his head. "It's not crazy if dad says it's not!"

Steve Martel felt proud, but did not look at his son. "We need the power," he said. "We need to make this a success. We always knew stocks of coal and oil wouldn't last for ever."

They were silent. Hedgerley seemed to be fighting an internal battle, then his lips compressed.

"Very well, I'm with you," he said.

An hour later the machine had begun its descent again. Martel wondered whether the patched-up equipment would stand the strain. The minutes lengthened into hours, and they sank lower and lower,

every steel plate vibrating with the roar of the burning jets. It was almost unendurably hot, and at length he ordered a halt. Dave had just taken over his watch, and his tired eyes shone. Both knew that they were very near to success.

"We'd better wait for some of the heat to dissipate," Martel said.

After resting, they burned their way downwards for another hour. Martel switched off the power, rising stiffly. Dave was huddled in his chair asleep. Martel realised that he himself was the only one who had not slept for twenty hours, and he returned to his chair, to settle down to sleep.

He awoke with an odd feeling of being unable to move. His wrists and ankles were bound to the chair, and he raised his gaze to meet Hedgerley's eyes.

"You've made a mistake," Hedgerley said, thinly. "A big mistake. I draw two pay packets—one from your firm,

and one from a foreign country we don't need to mention." His lips compressed. "I came to see that this job is a failure—and such a failure that no one will try again! I'm going up in one of the balloons, Martel, and leaving you here." He laughed harshly. "Up there, I shall tell them a story which will earn me a medal! That'll be funny, eh? And among other things, I'll tell them both you and your communications operator are dead!"

Martel struggled, and Hedgerley laughed again. "I'll not only do my job, but make myself look a hero," he said. "This is your last mistake."

He dragged the chair to the central trap and pushed it over. Still bound to it, Martel landed heavily on the floor below and Hedgerley looked down from above.

"Goodbye, Martel——"

He went from view; his footsteps crossed the floor, then came silence. Martel wondered what had happened

to Dave, who had been sleeping too. He began to struggle. His bonds seemed a trifle less tight, and he judged that the fall had loosened them. The chair was of hard-wood. He exerted all his strength, and heard something splinter as one arm came abruptly free.

Within moments he had wriggled from the ropes. As he stood swaying and rubbing his wrists, a slight jar shook the machine. Another life-balloon had been cast free, he realised, and was presumably now rising up through the shaft to safety. He wondered whether Hedgerley had taken the precaution of damaging the only remaining balloon. Probably.

The light had gone out, and he crawled to the centre of the room. The ladder was gone. Drawn up by Hedgerley, he realised, so that he could not get into the control room above.

He searched the walls, found a mica observation window, and at last got it open. He

scrambled through into the boring, still so hot that it scorched his clothing. There was just sufficient space for him to squirm upwards between the machine and the tunnel wall, until he could reach the deck above. But the central control room was empty.

"*Dave!*" he called.

There was no answer. He rested, then went up through the hatch to the top of the machine, trying not to think of the miles of rock stretching above him, or of what might have happened to Dave.

The last life-balloon was still there, and he dragged open the door of the tiny, suspended cabin. Dave lay on the floor, and his eyes were just opening.

"We—don't—give up, dad," he whispered.

Steve Martel gazed at him. There was a bruise on his forehead, and he breathed unevenly in the stifling air. Slowly Martel realised that scorching fumes were rising about them—which meant

that they were very near, indeed, to success! But Hedgerley would say that the machine had been destroyed and that the attempt was unsuccessful. As a result, there would never be another attempt.

"We can't give up, now, dad," Dave said.

Martel bit his lips. It was a big risk. The machine was becoming more and more unsafe, and the temperature mounted steadily.

"Just a little farther down, dad," Dave said.

Steve Martel turned abruptly. If his son would risk it—so would he, he thought. He went to the control room and sank stiffly into the seat. Once again flames rushed and roared from the jets below and splashes of molten lava flamed outside the windows. But the machine did not sink. The hull shuddered, and from above came a fearful grating sound. Dave had followed him, and his face was white.

"We're jammed, dad," he said.

Martel reversed the machinery, flinging the mighty borer up and down as he strove to release it. It trembled, clawing upwards on the sprocket slots, then stuck. He flung it down again, then up. Down once more—and abruptly the floor lurched. Martel felt fear run along his spine. *The bottom seemed to have fallen out of the shaft*, and they were plummeting downwards . . .

He switched off. The floor sloped more and more steeply, then, with a grating thud, they were still. Through the window near them, which sloped sharply, red light streamed. Martel went slowly to it and gazed down, appalled at what he saw. Below stretched a great sea of leaping flame and incandescent gas, glaring behind fumes which rose thickly. Here, he realised, was the very cauldron they had come to seek. From it, heat could be taken through great pipes to the surface,

there to provide power for enormous industrial machines.

He looked upwards. Glowing debris was plunging past the window. Masses of rock were breaking away from the tunnel above. The hull of the borer shuddered, slipping gradually downwards.

He clawed up the sloping floor and flung the sprockets into reverse. They grated on the rock; the machine heaved, then settled down a little lower. He switched to neutral hastily, wondering how long the machine would continue to cling to the slots in the crumbling tunnel walls.

This was like the first time, he thought, *but worse*. Abruptly the panic which he had held at bay so long returned. The task was accomplished—but he was trapped. Trapped, *again*. He sank his face into his hands, hiding the glare beyond the mica window. This time they were too deep for a rescue party to reach them, even if there was time . . . *And*

Hedgerley had damaged the last balloon.

The floor trembled again, and he felt it was slipping. Then a hand came on his shoulder, turning him gently.

"Dad——"

He opened his eyes. "You shouldn't have come, Dave. I told you not to. You should be above—safe."

"I—wanted to come," Dave said.

Martel felt overwhelming pride. "You're a brave man, son. It's a pity it's too late. Hedgerley had jammed the balloon release mechanism. I noticed that, but didn't tell you——"

"I noticed too—and I've freed it!"

With the hope in the voice, and the tugging on his shoulder, Martel came to life.

"*Freed it!*"

"Yes—that's what I came to tell you!"

"Then what are we waiting for!"

They scrambled to the top deck, and into the tiny cabin suspended from the balloon. Below them, the machine lurched, and Steve Martel operated the release. Like a bubble the balloon bobbed upwards, rising through the tunnel. Below, the machine vanished abruptly from view; fumes and sparks raced up by them, and Martel gripped Dave's shoulder.

"We've done it, son," he said.



FICTION

We have only one fiction title to review this month, but that does not matter, for the book we are going to mention is an important one and it will do a great deal towards spreading the science fiction gospel, though at first sight that may seem to be not so.

UNBORN TOMORROW by Gilbert Frankau comes from Macdonald and Co. (16 Maddox Street, London, W.1) at 12s. 6d. This is quite a high price for a novel, but we think that it is justified. This is a long book. Its quality is higher than most. It is well produced. And it will grace the shelves of even the most exacting collector.

Gilbert Frankau is known as a quality writer. UNBORN TOMORROW is his last story. It is also, we think, his highest quality book. Some people will call it fantasy, and the point is arguable. But granted that to

be true, it is fantasy so near to science fiction that it is as near as makes no difference.

Written in gentle, elegant prose, spacious and unhurried, the story follows its slyly humorous way through the adventures of a soldier of the old school, the local squire, a huntin', shootin', fishin' man of red blood and straight shoulder, a "piece of England's backbone."

Nothing remarkable about that? But the adventures of Sir David Ian Murella of Coddingham Keep take place in the fiftieth century! Di (Sir David's soubriquet) took a toss when out hunting at the grand old age of sixty-eight and woke up in the year 4952.

Things were very different.

UNBORN TOMORROW is a refreshing change from the pessimism of most futuristic novels. In a sense, it is 1984 in reverse. Naturally, there had

been an atomic war. But that wasn't all. A personage called the Blessed Baumgarten had invented a Beam which detonated everything explodable at a range of thousands of miles. It went off accidentally and very nearly wrecked the world, killed off half the population, flooded a third of the land. But all that is history in Di's future time. Permanent peace is kept by sweeping the world occasionally with the Beam, thus ensuring that de-armament is a real thing, rather than a paper treaty.

And England of the fiftieth century is most interesting. Democracy has gone. Only little bits of Africa retain it. Most of the world, *all* the Western world, is united under the papal omniscience of Roman Catholicism. It is religion that rules again, not politics.

The spacious days have returned. Finery, elaborate dress, exquisite food, palatial dwellings have all come back to take their place in England's society. So has serfdom!

Di pursues the life of a gentleman in a way which gives that term a certain materialistic meaning. His youth has returned, as far as exertion is concerned, and, being of amorous bent, he succeeds in

enlivening his stay in the future by numerous collisions with "comely wenches." He very nearly marries one when a rapier through the lung—duelling, too, has come back—effects his return to his own time. He finds great difficulty in persuading his friends that his adventures were real. They all reach a compromise by assuming that he developed a neurosis.

Though the book is laced with humour and ready wit, it contains a well-thought-out exposition of various forms of social control. It gives the lie to democracy in a most convincing way. It champions capitalism and shows how that kind of economy can work to the advantage of everyone in a society autarchly religious, where double-dealing and cheating and lying and stealing are anachronisms.

Though the schematics of civilisation put forward in this book are astoundingly unfamiliar, Frankau expounds them in such a way, with such evidence, such reasoning, that it is difficult to contend that it would be impossible to run a world like that. Frankau shows it running. And it looks good.

Such a pity we would have to kill off half the people before we could have it!

NON-FICTION

BETWEEN THE TIDES by Philip Street, INSECTS INDOMITABLE by Evelyn Cheesman, PROFILE OF SCIENCE by Ritchie Calder, THE CONQUEST OF FEAR by Harley Williams, FLEMING, DISCOVERER OF PENICILLIN by L. J. Ludovic, THE ALCHEMISTS by F. Sherwood Taylor.

The books mentioned above cost, in their original editions, a total of £4 7s. Yet many thousands of people acquired them for a total of only £1 4s. They were members of the Scientific Book Club—which we thoroughly recommend to our readers.

Run by Foyles, The Scientific Book Club issues one title a month in its own unabridged edition at 4s., including postage. The monthly selections are chosen from high-quality books which have previously sold at anything from 10s. 6d. to 15s. To become a member all you have to do is send a postal order for 4s. (3s. 6d. for the book, 6d.

postage) and agree to take at least six books in the future. The books come to you monthly and you send off postal orders in much the same way as you subscribe to *Authentic*.

If you wish to save postage, you can send 24s. for the first six books, or 48s. for the first twelve. This is the way to build up a fine library of good books at low expense. The address of the Club is 121 Charing Cross Road, London, W.C.2.

ANIMAL LIFE IN FRESH WATER by Helen Mellanby has just had its fifth edition, at 12s. 6d., from Methuen and Co. Ltd. (36 Essex Street, London, W.C.2). The title is somewhat misleading, because the book deals only with invertebrates, but it does so with great competence and interest. Roughly, it is a guide to the backboneless animals of freshwater habitats, with the emphasis on macroscopic species—those which can only be studied with a

microscope are dealt with very shortly.

Two hundred and eleven clear, precise line drawings supplement the text, which is lucid and extensive. Mrs. Mellanby, who once Demonstrated zoology at the University of Sheffield, went out and collected every one of the specimens with which she deals, and from these she made the drawings. Such a broad experience of fieldwork enables her to cover not only the anatomy of the animals, but their physiology and behaviour as well. Reading this book, one comes to know these creatures for what they are, not lowly, insignificant nonentities, but each one with its own way of living and, almost, its own personality. Like nothing else, this book will clear away false homocentric ideas, and point to the complex evolutionary ladder of form and spirit of which man is *not* the end product, but only one of many such terminations.

FRESHWATER MICROSCOPY by W. J. Garnett is a new book, published at 30s. by Constable & Co. Ltd. (10 Orange Street, London, W.C.2). Though

similar to the book above, it restricts itself to those species for which a microscope is needed. Thus, in a sense, it is complementary to **ANIMAL LIFE IN FRESHWATER**.

Mr. Garnett has had many years of experience in all branches of biology, and he has made a special study of freshwater life. His book covers both plants and animals, with chapters on the use and care of the microscope, collection of specimens, and the preparation of permanent slides.

Almost every species mentioned in the book is also illustrated by a photomicrograph. Many of these are very beautiful. Printed on coated paper, they alone would make the book worth the price.

In both these books we would quarrel at times with the systems of classification, but that is a small point in cases where taxonomy is the least important aspect of the book. Mrs. Mellanby's treatise has already proved its worth through four editions. We are confident that Mr. Garnett's will do the same.

FANZINES

In our opinion the three top places among British fanzines are held by SPACE DIVERSIONS, ANDROMEDA and SPACE TIMES, in that order. OPERATION FANTAST, of course, is more superiorly produced, but it does not contain as much material and it does not appear regularly or frequently. Otherwise it would have been given second place. No British fanzine has ever topped or equalled the quality and quantity of SPACE DIVERSIONS.

This fanzine, published in conjunction with the Liverpool Science Fiction Society by Norman Shorrock and Dave Gardner (from 12A Rumford Place, Liverpool 3) costs 2s. 6d. for three issues (50 c.) or one shilling per copy (20 c.). It can also be obtained in exchange for up-to-date fanzines or prozines. Issue No. 7, the bumper, 108 page number, costs 2s. per copy, and is indeed worth it.

It contains twenty-eight separate features, including a novelette of quite high standard, three short stories and a serial instalment. Non-fiction

covers reviews, biographies, news, science articles, poetry and correspondence. A number of competent illustrations accompany the well-duplicated text. There can be no doubt that a great deal of care and hard work have gone into the production of this fanzine, and we thoroughly recommend it.

ANDROMEDA is a fairly new fanzine. Although the latest issue to hand does not mention the fact (a bad oversight), it comes out under the auspices of the Lakeland Science Fiction Organisation, published by Pete Campbell, who is also the editor, from 60 Calgarth Road, Windermere. It costs 2s. a copy (30 c.) or 7s. for four issues (\$1.00). Overseas subscriptions should be sent to Dave Rike, Box 203, Rodeo, California.

ANDROMEDA runs to about sixty pages, well duplicated, well illustrated, and contains a good quantity of first quality material, including several short stories, a few articles, and quite a number of interesting features such as biogra-

phies, crosswords, news, letters. If the publishers can manage to bring their price down a bit, they will surely be putting out something of high value. Even now it ranks next to SPACE DIVERSIONS.

SPACE TIMES is the fanzine that once upon a time was run solely by the Nor'West Science Fantasy Club, but has now developed an association with London through publishing editor, Stuart Mackenzie. The new broadness of outlook has made a considerable difference to this fanzine. In the old days it was narrow, bigoted and pathetically adolescent and belligerent. Now, it has grown up. Good for you, Stuart!

The number to hand has fifty-eight pages, excluding the very nice covers. And those pages are full of very fine material, including a story by Arthur C. Clarke, articles by science fiction editors of Graysons and Sidgwick & Jackson, other stories, articles, features, letters, etc. A very good piece of work on the part of the publishers and editors.

SPACE TIMES costs 6s. for twelve issues (\$1.00) and we consider this to be extremely reasonable. If these people can do it for 6d. a copy, the others will have to look to

their coffers! British subscriptions go to Brian Varley, Balmoral Hotel, 33 Princes Square, London, W.2. Overseas, to Dale R. Smith, 3001 Kyle Avenue, Minneapolis 22, Minn., U.S.A.

It was a great pleasure for us to see the first issue of FISSION, the new fanzine from a new fan area, Surrey. *Authentic* played some small part in the birth of this fanzine, since the two editors, Colin Parsons and G. M. Wingrove, met each other through our columns. As is to be expected with a new fanzine run by only two people, FISSION is small and a little bitty. But the reproduction is good and the thirty pages contain some well-selected material. Wisely, the editors have refrained from using illustrations; these can ruin a fanzine. Contents range over short stories by F. G. Rayer, P. J. Cakebread and H. J. Campbell; a personality piece by Bryan Berry, letters, reviews, science article, quiz, and messages from well-known fans. FISSION costs 9d. a copy or 4s. for six issues, from Colin Parsons, 31 Benwood Court, Benhillwood Road, Sutton, Surrey.

We hope our readers in that area, and everywhere, will support this brave venture.



Projectiles

PROPHETS v. PRIESTS

This letter comes from Dr. W. Grey Walter, author of The Living Brain, reviewed in Authentic No. 34 (Duckworth, 15s.).

I did not fail, as usual, to read every page of my latest number of *Authentic*, and so came upon your article on *Brainwaves* with a gratification that is always more lively when surprised; for beyond a review it is indeed an honour for *The Living Brain* to be so appreciated in our premier science fiction magazine. Your article was also welcome as a reminder to your writers that the brain is a very real and complex organ and not, as unscientific fiction writers of various philosophical schools describe it, a kind of cushion between man and that undiscovered organ, his mind. An easy transcendentalism must often seem a tempting short cut for those who are blazing the new trail of science simplification;

telepathy is so much more amenable than electroencephalography. Nothing is impossible, but nothing new in science is easy. I hope science fiction writers will continue to be severe prophets of the laboratory rather than indulgent priests of the temple.

Careful readers will have noticed some points in your article which you may like to correct. The delta group of rhythms—not alpha—is the dominant one in early childhood, and the group by which tumours are located. Theta rhythms are the second—not the first—to appear in terms of age and maturity. Your writers may also like to know that brain rhythms, however specifically named, should always be referred to in the plural: the frequencies of the electrical rhythms of the brain are no more singular than those of the differential colour bands of the spectrum. I notice that the best science fiction is always meticulous about such details.

W. GREY WALTER, M.A., SC.D.,
Burden Neurological Institute,
Bristol.

We are honoured to find that you are one of our regular readers, Dr. Grey Walter, and we are glad to know that you consider Authentic to be Britain's premier science fiction magazine. It has always been our policy to demand the utmost accuracy in the stories we publish, though in some issues it has not been entirely possible. We do indeed insist that our writers are prophets of the laboratory, as you succinctly phrase it; we have no space for the temple until its dogmata become scientifically measurable. And thank you for your corrections. We are always happy to acknowledge errors.

NO ILLOS!

There's one thing I would like to mention. Science fiction should not be illustrated. Let me explain my opinion, please. Now, when I read—let's say Charles Dickens, I like illustrations, because Dickens recounts everything in detail; he leaves absolutely nothing to his readers' imaginations. Science fiction is, more or less, just a stimulant to one's own thinking. I'm completely free to draw my own conclusions out of the narrated facts, and so, illustrations irritate me. My guess, as to how terrestrials of one thousand years hence will look is almost as good as the artist's. And I simply don't believe that girls will be clothed and will wear exactly the same hair-do as they do now, as is depicted in *Subtle Victory*. I very much appreciate technical drawings; for pictures

like that—an emaciated man and a long-haired girl, both of them looking as if they had met somewhere quite recently, I've no use at all. What on Earth has that to do with science fiction? The dreadful atmosphere the picture is supposed to transmit to the reader I can much more conveniently create in my own imagination, undisturbed by drawings. A person who lacks imagination to such a degree as to rely on pictures for that, never reads science fiction anyway.

Rose Frommann,
Vervielfältigungsburo, Nurnberg,
Germany.

You don't believe girls will be clothed! Rose, Rose! Seriously, we can see what you are driving at but we don't agree. We feel that people with really active imaginations like to bend them on wider fields of reference than such mundane affairs as clothing and hair-dos. They like to be stimulated to think of the economic, social and political relations of the future, not the trivialities of individual existence. Anyway, you don't have to look at our illustrations!

SPACE BOOK

I have just turned the last page of *Authentic's* fortieth issue, and I think back to the days when the first issue appeared. Although the quality of the goods turned out then was pretty high, the ancient *Authentic* was nothing really exceptional, and when I look at the modern version I am amazed at

the vast improvements that have taken place. No other science fiction magazine in Britain can equal your covers. With particular reference to these, I should like to put forward a suggestion. Could you not persuade your publishers to produce a non-fiction book entitled (very aptly) *From Earth to the Stars?* This book could contain all the fine paintings used in your series, together with covering information. I have no doubt that there would be a good demand for a work of this kind. Not only by readers of *Authentic*, but also by the scientifically minded public.

John Webb, 16 Claverton Street,
London, S.W.1.

Thanks for the kind words, John. Your idea for a non-fiction book was anticipated here several months ago. The book is now past the planning stage and will be issued later on in the year. Not only does it contain large reproductions of Authentic covers, with greatly expanded covering information, but it lists some of the top British and American writers as contributors of many highly illustrated articles. It will be called the Authentic Book of Space, and has an Introduction by Arthur C. Clarke. The price will probably be 5s.

SHE SQUIRMS

I should like to compliment you on your new series of covers, especially the notes on the back. And as for your offer of six non-

fiction books for the Star Letter! Well, if I should be lucky enough to land 'em, I only hope there's a copy of *Conquest of Space* laying around when you send them off.

The main thing about your magazine is the lack of juvenility in the letter columns. Now, letter columns are some of my favourite reading matter, but oh dear, some of them make me squirm. And you can imagine the squirms when I tell you that I only seriously started reading S.F. about three and a half months ago, and since then the total of mags, books and pocketbooks I've read is heading up towards the thousand level, mainly through libraries run by Ken Slater and Tom Mason, but with the aid of the local shops. I seem to have run them dry of S.F. and every time I put my head round the door of any paper shop now, the proprietor groans!

Joy K. Goodwin, 66 West Valley Road, Hemel Hempstead, Herts.

Lovely letter, Joy. Wish we could have printed all of it, but we must let a few others get a look-in! Sorry about the Star Letter business; that closed down a month before your letter came. You have to be quick on the draw with these things. Write again, though, won't you?

NOT BEST

I'm afraid I cannot agree with your statement that *My Name is Ozymandias*, by Martin Jordan, approaches science fiction at its

best. This story's plot too closely approximates to the old space opera formula. And personally, I feel that four short stories is too many; I would prefer a longer novel and only two shorts. I have several American mags I would like to swap for English books and mags. Anyone with an SF collection care to sell some of his books to me?

Allan A. Fabig, 228 van Heerden Street, Capital Park, Pretoria, South Africa.

POEMS

Got any space for this poem—besides the waste paper basket? If you have I can let you have as many more as you want. This was one of my experimental models.

Adam Chester, 111 Fitzgerald Avenue, Christchurch, New Zealand.

Sorry Adam. Our policy says no poems...until readers clamour for them. Write us a story instead, eh?

UNSATISFIED

Up until recently I could always look forward to an enjoyable evening with *Authentic*, but the last two issues left me vaguely unsatisfied. Whose fault was it, *Authentic's* or mine? So in fairness to us both I browsed through the two issues again and found quite a few faults in your stories and a few on your mag in general. But I still think *Authentic* is tops.

J. S. Milson, 34 Crown Street, East Sydney, Australia.

The faults couldn't have been all that bad if you had to go back and search for them, Mr. Milson! Still, thanks for your letter and criticism. That's what keeps us on our toes.

BRITISH ALONE

In your issue No. 37 you proudly state that all the stories are British. Surely if an American, French, German—or any other nationality come to that—science fiction story comes up to the standard of your magazine, slap it in.

4041600 LAC Smith, c/o Post Office,
128 M.U., R.A.F., Abu Sultan,
M.E.A.F. 25.

You're right, of course. Indeed, we've already published one Swedish and two Canadian stories, and we'd love to see some from other European sources. But it is nice, after all, to have a complete issue made up of British writers. There are not many of them, you know. Besides, we are trying to build up a distinct British science fiction genre—something that no other British science fiction magazine has ever tried to do. Occasionally we publish original American stories, but only when they lean more towards the British style than towards the kind of American science fiction that is so very, very plentiful. Let's have at least one magazine that encourages home talent!

STINKERS

On average your magazine has improved month by month. Of course, you sometimes let a "stinker" creep in, but what editor doesn't? No human is infallible. I like your policy of encouraging new authors. Naturally, it means that we must accept a lower standard of writing from some of these new men, but even Asimov and van Vogt and all the other top men had to start at the bottom as well. Keep up this practice and it is bound to pay dividends eventually.

J. L. Grant, 38 Lady Helen Street,
Kirkcaldy, Fife.

Editing a magazine is not all plain sailing, Mr. Grant, and one of the things that compensates for all the headaches is in helping a new author to make the grade. We intend to maintain this policy. Thanks for your comments.

NIGHT SKY

I think *Authentic* is the tops, and it's nice to have a book one can hold in comfort. I would like to suggest a series on the night sky each month, the stars and their positions and a few details. When reading stories of other worlds it would be very nice to have a little idea of their whereabouts.

F. M. Hills, 34 The Close,
Babraham, Cambridgeshire.

Thank you for your suggestion, Mr. Hills. We will certainly bear it in mind for future consideration.

SAME FLAG

If this letter sees print there are a few things I would like to bring to the attention of British fans. Here in Canada we have just initiated a nation-wide Stf club, whose purpose is to bring Canadian fans together, let them get to know each other, and in general raise the standard of Canadian fandom. With the debut of *Authentic* on the stands here, we came up with the idea of taking British fen into the club too. After all we are all under the same flag. With British fen in the Canadian Science Fiction and Fantasy Association, we feel we will benefit by the material they contribute and the part they take in the club, for we know there is an abundance of talent over there. As Chairman of this club I would like to extend an invitation to any British fans who are interested. There are still a few copies of our first bulletin on hand and will be sent to any fans writing to me about the club.

Harry Calnek, Granville Ferry,
Nova Scotia, Canada.

Congratulations and good wishes, Mr. Calnek, and we hope many of our readers join you. One thing, though, puzzles us. If you are not British, what are you?



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